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Advanced Management

contributor to orderly progress

JULY
1953

VOL. XVIII NO. 7

There is one attribute without which no supervisor or executive, no matter what his capabilities in other directions, can hope to be successful, for without it he cannot hope to communicate with his fellow human beings.

Robert N. McMurry discusses some of the consequences of such a lack in . . .

Empathy: Management's Greatest Need

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Engineers are getting a lot of attention these days, with companies bidding feverishly for their services. But is all this attention in the right direction, or has the emphasis been placed too strongly on their engineering functions?

Read what two men say about this in . . .

Engineers Need More Than Technical Training

for one point of view on this subject.

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SOCIETY FOR ADVANCEMENT OF MANAGEMENT

The Pioneer in Management Philosophy

SOCIETY FOR ADVANCEMENT OF MANAGEMENT

WHAT IT IS • • • • WHAT IT DOES

THE Society for Advancement of Management is the recognized national professional society of management people in industry, commerce, government and education. The influence of SAM extends beyond the United States into most of the free countries of the world through members in these countries and the international circulation of ADVANCED MANAGEMENT. Representing no special interest, the Society is motivated by a selfless zeal to spread the benefits of scientific management wherever management is required.

SAM has consistently adhered to the purpose of helping executives approach all phases of the management problem—production, distribution, finance, administration, industrial relations—in the engineering manner. This means discarding thumb rule guessing, and haphazard methods and adopting instead the open mind and the scientific method in the solution of every managerial problem in each particular circumstance.

The purposes of this Society are, through research, discussion, publication and other appropriate means:

1. To forward the elimination of waste and the development of efficiency through the study and application of scientific principles and methods of management
2. To bring about a better understanding of the mutual interests of government, management, investors, labor and the public in improved management.
3. To provide means whereby executives, engineers, teachers, public officials and others concerned, who apply scientific methods to management problems, may promote this common interest.
4. To inspire in employee and manager a constant adherence to the highest ethical conception of individual and collective social responsibility.

CHAPTERS

SAM chapters are located in major industrial centers throughout this country and Canada. They serve their members through frequent discussion meetings, round tables, research and special study groups, intensive training courses, plant visits, news letters and educational bulletins. The chapters provide frequent opportunities for members to exchange ideas and experiences, and to enjoy continuous contact with the latest developments in management ideas and practices. In many cities, SAM chapters are well regarded for their contribution to community and industrial development.

NATIONAL ORGANIZATION

The National Organization is headed by a Board of Directors, a President, Executive Vice President, Secretary, Treasurer, Director-at-large, and five Divisional Vice Presidents—each member of the group a key-man in management. Although the chapters are autonomous in their activities, they are able to benefit from the counsel and guidance of the National Officers and Organization. There is constant reciprocal action within the Society through its established channels and in the communities in which it functions.

• *Applications for membership may be made through the local chapter officers or membership committee, or by writing direct to the National Office of the Society for the Advancement of Management, Inc., 74 Fifth Ave., New York 11, N. Y.* •

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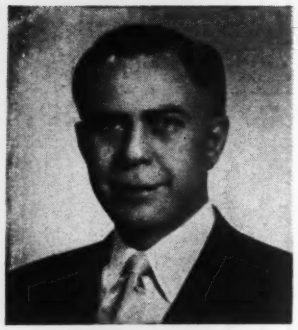


Edward W. Jochim
President, SAM,
1952-53

Where We've Been

TO BE perfectly honest, on occasions when I could not find time to take care of my business obligations—let alone those extra activities one wants to do—and nothing seemed to be going the right way, I looked forward to this moment. I looked forward to the moment when I would be free from the demands of this office. But now that the time has come to turn over these obligations, I have only regrets—regrets that I did not do more with the marvelous opportunity you gave me. There is so much more that could be done—and I am sure will be done in the next year under Bruce Payne's able leadership.

My years of activity in this Society, and particularly in this past year, have cost me much in terms of time, energy, and money. My regret now is that I did not put more time, energy, and money into the Society—for the more I put in, the more I received in return.

Thanks to the cooperation and hard work of so many of our members, we made outstanding progress in the past year. A portion of this issue of ADVANCED MANAGEMENT will tell you the complete story. I want, merely, to hit the highlights in this final report to you.

Conferences—Bill Blank and his committee produced an outstanding fall conference last year in terms of our objectives—a forward contribution to management. Through no fault of the committee, it was not a financial success. From what I know of the work Bill and his committee are doing on the fall conference for this year, it will be an even greater contribution to management—and a financial success as well.

Fred Hornbruch and his committee achieved an outstanding spring conference this April—both in content and finances.

Research—Harold Smiddy has completely reorganized our research division, to increase the quantity, the quality, and the scope of the Society's research and development activities, and to make these activities more widely available for the advancement of management.

Jim Eddy and his committee completed their monumental job of selecting and defining 332 terms used in methods, time study, and wage incentive work. The project, published as the *Glossary of Terms*, is so successful that a second printing has been ordered.

New Offices—Because of expanded operation in the National Office, we were forced to find larger quarters. Now at 74 Fifth Avenue, the National Office has five times the space and a more efficient layout in which to carry out its operations.

A grant from the Lincoln Foundation is making it possible to add a director of economics to the National Office staff. This great addition will be made soon.

We will soon add another full time man to the National Office staff—a business manager. His time and effort will be spent in promoting the sale of the products of the research and development committee.

Chapters—We have added eight new chapters during the past year. Spade work is proceeding on four additional chapters, all of which should be added to the roll before too long.

Regional organization, tried on a limited basis this year, is already proving its value. Divisional organization, just initiated, will unquestionably contribute to our effective development.

Membership in the Society increased from 5468 to 6271 in the past year, an increase of 15%. We have now reached the growth point where we must consider the quality as well as the quantity of our chapters. A poor chapter is definitely worse than no chapter at all.

It is well to bear in mind that we come from all parts of the country, with many varying local conditions. For orderly progress, we must each adjust somewhat to the other. We must think in terms of all the chapters as well as our own chapter. The strength of our Society lies in the strength, the combined strength, of our chapters.

We cannot, like the shoemaker, have barefoot children. We must apply to our own Society operations the very best in advanced management that we are organized to foster.

I think our children are shod.

Bruce Payne
President, SAM,
1953-54

Where We're Going

THE SOCIETY has come of age. Ed Jochim's report on the opposite page tells in brief the accomplishments of the past year. The story is most encouraging—it is challenging. I believe that with the past year's record to build upon, the next twelve months are vital to the growth and development of our organization. I look with optimism to our future.

Our growth and development in the next twelve months will be in membership, in chapters, and in service to our membership. This development will continue for years as we meet the objectives of our Society—the advancement of management.

Members—The 15% growth in Society membership last year is an excellent record. With our fine chapter organization, we should expect at least an equivalent growth during the coming year. In the ranks of management there are thousands of potential members who will benefit from chapter affiliation. Executive and supervisory development is fundamental in the objectives of our Society.

Chapters—Ed Jochim reports that there are four new chapters in various stages of preparation for affiliation with our Society. These certainly should give us a good start for the year. Our chapters are basic to our strength and service to our members, and therefore we must have only strong, active chapters. This chapter activity will be more accurately reflected by the new Emerson Trophy Plan now in effect.

Chapter Programs—More chapters are taking advantage of the basic work which has been done in the past few years by the National Office and national committees to make possible fuller chapter programs—round tables, clinics, chapter research, plant visits, and interesting monthly meetings. Some chapters have organized regional conferences, and these should prove to be of even greater importance in the year ahead. The National Office is now in a position to counsel and assist directly those chapters planning conferences.

Publications—With the planning that went into our publications last year, we should be in an excellent position to move ahead and make ADVANCED MANAGEMENT even a greater asset to our members and management.

At the same time, ADVANCED MANAGEMENT cannot be expected to accomplish the complete job of communications with chapters. It is felt that much of our chapter and internal Society activity news can be handled more effectively if done separately by other means of communications.

Communications—To increase the service to the chapters, it is necessary for us to develop our lines of communication—by means of a two-way pipeline. National Officers and national committees will report through the National Office to chapter officers. Chapter officers should, in turn, report to the National Office for further expression of their ideas, plans, and objectives. This information, then, will be acted upon by National Officers and committees for the greater success of the Chapters.

Service to chapters and members, and good communications will be two of the major objectives of all of us this coming year.

Empathy: Management's Greatest Need

By ROBERT N. McMURRY

Being able to imagine yourself in another person's position is an asset for a supervisor or an executive. However, the initiative for improvement in this area must come from management.

FROM TIME to time George French has wondered why he is so manifestly and inescapably unpopular. He cannot understand it. He has always tried to do the right thing. In fact, he has often gone out of his way to be helpful.

As a department head with the Booth Manufacturing Company, he has regarded it as his duty to help his subordinates to improve themselves in every way. As a result he has always made it his practice periodically to counsel with them and point out their shortcomings to them. That they have not always been wholly receptive to his constructive criticisms is one of the crosses he has had to reconcile himself to bear. Nevertheless, in spite of this, he still feels it is his duty to help them in this way.

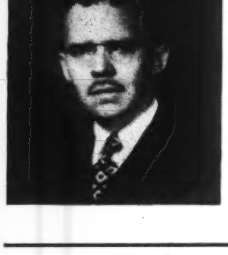
His father, whom he has always greatly admired and tried to emulate, had always told him that one of his greatest obligations in life was to help his fellow man. In consequence, he has persevered, even though his subordinates have not only frequently failed to follow his advice, but some have gone so far as to nickname him the "Broadaxe of Dept. 126."

All his life he has dedicated himself to doing his duty, however painful though it might be. Early in his life his father gave him a set of maxims which he has tried to follow faithfully, regardless of how strongly he might be tempted to swerve from the path of duty. These maxims are:

1. Always respect your superiors (they have had more experience and know their jobs or they would not be in them).

2. Always follow instructions as given (there is a good reason for every rule).

3. Always be honest and forthright in your dealings with others (while some may not like it, they will respect you for it).



HIGHLIGHTS ON THE AUTHOR

The author has had his own consulting service in the fields of personnel, industrial relations, and market research since 1943, and previous to that, since 1935, was in charge of the Chicago office of the Psychological Corp., engaged in the same type of activities. He hold degrees from the University of Chicago and the University of Vienna, Austria.

4. Always put the interests of your employer before your own (this is one of the best ways to make progress on your job).

5. Always try to help others, even though they may not be appreciative of it.

It has not always been easy for George to follow his father's admonitions. Some of his decisions have been hard for him to make. There was, for example, the case of old Pete Rogers. Pete had been with the company for 35 years. When it came time for him to retire, a review of his personnel file revealed that, due to a clerical error, he had never been officially listed as an employee with the insurance company which administered the retirement trust.

In consequence, technically Pete was not eligible for a pension. George had tried to explain to Pete that while it *was* unfortunate, mishaps of this character did occur and that there was nothing that he could do to help him. When Pete protested, he had even shown him the contract with the insurance company which stated explicitly the conditions under which employees were eligible for a pension, and had explained why he was ineligible. He hadn't liked to deal with such situations, but a rule is a rule.

Then there was the case of Molly Stevenson. Molly was a clerk in his department handling the first step in processing orders received from customers. With the help of the company's methods expert, he had worked out performance standards for each clerk's activities. In this way he knew exactly what each girl should be expected to produce.

Molly had originally been one of his best and most faithful performers. Her work was accurate, and she spent little time in the washroom or in idle talk with the other girls. But over a period of time, her work had begun to deteriorate both in quantity and quality. He had spoken to her about it on several occasions. Each time she had promised to improve and for a short time she had. Later, she had slipped back, each time a little further.

In the meantime, he had heard that Molly's widowed mother, of whom she was the sole support, was suffering from cancer and that Molly was attempting to care for her at night to save the cost of a nurse. He suspected that this might be the reason her work was suffering. Hence, when he next talked to Molly he had told her that she would have to find someone to care for her mother at night because it was affecting her work.

Molly burst into tears and said she would try but she didn't know whether she could because doctor bills were already taking everything she earned. He had said that he understood, but that she must remember that her work must come first if she expected to stay

in his department. She promised that she would try and for a while did show some improvement.

Ultimately, however, her performance had shown a further retrogression and it had been necessary for him to call her in and release her. He had explained and she agreed that he had given her fair and ample warning. He had hated to do this, but his conscience was clear. She had been unable to meet the department's production standard; she had been warned; she had to be replaced.

Persons like George are not intentionally cruel. They are not overt sadists; they derive no immediate personal satisfaction from making others unhappy. They are, of course, pleased with the *power* they have over others. If the exercise of this power results in suffering, they may even feel a momentary pang of regret that it is they who have been chosen as the instruments through whom circumstances or a higher authority have chosen to act. Such experiences are unpleasant, they admit, but they are all part of the day's task. They constitute one of the less pleasant aspects of the supervisor's work.

In short, such persons are neither vicious nor vindictive; they are simply incapable of *empathy*, of emotional resonance, of the capacity to put themselves in the place of another and respond as he does. In simple terms, *they are completely and totally insensible to the needs or feelings of others.* They have no insight into or real interest in people.

They regard people in the same casual, detached impersonal manner that they think of inanimate objects or animals. If a pair of shoes wears out, they are discarded; if a pet develops distemper, he is destroyed; if an employee ceases to be productive, he is taken off the payroll. It is this quality of complete conscienceless unconcern for others which reaches its apex, its finest flowering, in the ruthless dictator, e.g., Stalin; in the "torpedo" (the professional killer); or in the master of a mass extermination establishment such as Buchenwald.

Most individuals who lack empathy are not inhuman in a calculated manner; they are simply persons who find it difficult or impossible to form attachments to people. They cannot make even minimal emotional investments in others. Their capacity for affection, even interest in anyone outside of themselves, is usually quite limited.

What little warmth and love they have is jealously hoarded within their own egos and is lavished almost exclusively on themselves. Such persons are frequently not unfriendly; they may even be quite affable, especially with their superiors and associates. Often they are very public-spirited and generous, but always in a rather impersonal manner.

Hereditary or Environmental?

No one knows precisely why some individuals have a marked capacity for empathy, some less, and some practically none at all. It is probable that constitutional (inherited) factors may have a part to play. It is more likely, however, that early environmental factors have a vital influence in determining the degree of empathy of which a person may be capable.

Where the child has been reared in a cold, loveless, rigid, and overdemanding environment or one in which he has known little emotional security (his parents may have given him material benefits but little or uncertain affection), he may have feared to invest love or even interest in others for fear that it would not be reciprocated. Living always under the threat of emotional rejection by those from whom he seeks support and love, he dares not risk permitting himself to become too closely attached to others. They might (and perhaps have done so) reject his timid advances. In such instances, it is safer to hoard one's love within oneself.

People vs. Things

Under such circumstances, it is natural for an individual to turn his field of interest from people to *things.* Things are not expected to be a source of love; therefore, they cannot reject and hurt. *They are emotionally safe.* In addition, in a scientific age such as the present, things can be both fascinating and challenging. In consequence, they have tremendous appeal to many, particularly those who are especially sensitive to rejection.

Also in the American society of today, a preoccupation with *things* is highly acceptable socially. This is the "scientific age," and science, until very recently, has concentrated its activities almost exclusively on *things* rather than on people. It is not surprising, therefore, that business and industry with their emphasis on production, research, accounting, engineering, and finance have had unusual appeal to "thing-minded" persons.

Even sales work, which presumes to deal with people, has been largely mechanized through the introduction of research designed to determine the best means of exploiting the public's wants and needs through advertising and other standardized marketing techniques.

In consequence, business and industry probably have a higher concentration of predominantly thing-minded persons than do many of the professions, e.g., medicine, the church, and the arts. And from a purely materialistic point of view this is probably advantageous.

A single-minded concentration on *things* by management with less regard for humanitarian considerations has probably contributed largely to the industrial development of this country. It has doubtless resulted in a vast contribution to the national product and the tremendous improvement in the American standard of living which has accompanied it. Whether this growth and increase in effiiciency has also sometimes been at the cost of human well-being is a debatable question.

Certainly many of the frictions and conflicts which now plague business and industry may be attributed to the extent to which business management today is permeated with George Frenches—dynamic, efficient, loyal, and creative administrators who are also largely or totally insensitive to the needs, problems, and anxieties of the people with whom they work and whom they supervise.

The Union as Defender

Probably the best evidence of the acuteness of this problem is to be seen in the rapidity of the growth of the labor movement, once the social and legal shackles were removed from it. There are many conditions which influence workers' decisions to join unions. But one of the chief of these is the feeling on their part that management's points of view and attitudes lack an understanding for and appreciation of employee needs and problems. This, they recognize, is due in part to failures of intra-company communication—management is literally ignorant of

much that affects its people. But even when improved communication techniques have been introduced so that management is adequately informed, it is still often reluctant to take what the employees regard as needed action. Hence, many feel that they need a union as a defense against management's ignorance, indifference, or intransigence.

It is not that most workers distrust management's basic motives: The old stereotype of the capitalist as a hard-eyed, blood-sucking leech, mercilessly exploiting the helpless proletariat, has been relegated chiefly to Communist propaganda circles. Most employees are sufficiently sophisticated to know that top and middle management is composed of hired hands whose positions are fundamentally no different from theirs, except that the pressures are greater.

What they resent is management's blithe assumption that it already knows, on an *a priori* basis, what its subordinates need and how their problems should be handled. Too many management policies reflect either a complete ignorance of what is actually transpiring at the worker level or a total disregard for employee sensibilities and needs.

Typical of this latter type of thinking was that shown by the manager of an eighty-year-old plant which was being closed because it was no longer competitive. He told his employees, many of whom had over 30 years' service, that he would give separation allowances *only to those who were too old and feeble to obtain employment elsewhere.*

This manager was not deliberately and willfully attempting to be cruel. He was simply shortsighted. By excluding all but those who were manifestly incapable of other employment, he (by profession an engineer) estimated that he could save his employers approximately $30,000.

It never occurred to him to consider what $200 or $300 would mean to an aging employee who had given the best years of his life to the company. This was because *he was completely without empathy*. He lacked entirely the capacity to put himself in his people's shoes. He was a rational automaton to whom people are merely ciphers and are to be treated as such.

It is largely because industry has more than its quota of such executives that the unions have had such a rapid growth and continue to have the support of their members. The union, after all, constitutes their sole defense against such management.

The Schism in Attitudes

More immediately, however, this lack of empathy by supervisors and executives at every level is productive of many misunderstandings and conflicts in the course of day-to-day operations. These arise out of what may be termed "conflicts of attitudes."

An example may be seen in the difference between management and union attitudes toward incentive compensation based upon time studies. Management considers such incentives to be quite legitimate, even somewhat generous, since they enable the employee to share in the rewards of any additional effort which he expends. The unions, on the other hand, as well as many employees, regard them as instruments for the "speed-up," the conscienceless exploitation of the worker through appeals to his avarice.

Here may be seen the same technique of management as looked at from two violently opposed points of view: Those of management and labor. The attitudes of management are enthusiastic; that of labor is bitterly in opposition. Furthermore, neither has either sympathy or understanding for the other's point of view. Nor is either desirous of learning to understand the bases for the other's attitudes. Each group is monolithic in its opposition to the viewpoint of the other.

Furthermore, this conflict is based on no coldly rational difference of interpretation of the evidence; it is highly toned emotionally. Feelings run riot on both sides. Arguments pro and con are vigorously impassioned; factual evidence gives way to elaborate rationalizations; the level of discourse ascends higher and higher on the ladder of abstraction.

As the contestants become farther and farther removed from reality in their discussions, the higher and shriller becomes the emotional tone of their arguments. Ultimately, an impasse is reached. The parties to the conflict are so far apart that there is no hope for its resolution. The outcome is an uneasy state of armed truce. The net result is that time study rates become in themselves a symbol of management-labor conflict. Obviously, this does not enhance their effectiveness as incentives. (On the average, 70% of union grievances center on time study rates.)

This illustrates the fact that a lack of sympathy for others' points of view is not confined to supervisors and company executives. It is equally common among rank-and-file workers and their union representatives. Neither they nor members of management are able successfully to place themselves in the positions of those with whom they are in disagreement or are even desirous of attempting to do so.

In short, the cause of much industrial strife is to be found less in the specific practices and policies at issue and more in the *attitudes* of their protagonists and opponents toward them. It is not *the thing in itself* which is significant but the *feelings* which are associated with it. It is they which cause and perpetuate the difficulty. Therefore, if the conflict is to be resolved, the first step is to change the parties' attitudes toward the matter at issue.

Changing Antagonistic Attitudes

Superficially, this appears to be easy. It would seem to be only a matter of the clarification of misunderstandings. Given all of the facts it should not appear to be difficult for both parties to see the logic of the situation and reach an agreement. This would be true if both could observe the identical facts from the same perspective, i.e., objectively and without bias. This, unfortunately, is where the difficulty arises.

No one can ever be entirely objective about anything: He is always to some degree the prisoner of his preconceptions. In short, he has an *attitude* toward every issue with which he comes into contact. Further, each attitude has some (usually considerable) emotional toning or coloring. In other words, everyone is likely to feel at least reasonably strongly on nearly every issue toward which he has a well-established attitude.

If these feelings were strictly rational. they might be amenable to influence by logic. Unfortunately, they are not. Two factors influence them: The first of these is the *displacement of affect*. By this is meant the extent to which attitudes which are generated by one set of circumstances and which may well have been appropriate and justified are shifted or "displaced" on to other quite

foreign and often inappropriate objects.

A common example is the young man who (entirely unconsciously) displaces his hostilities toward his father onto his foreman. The father may have been an unconscionable autocrat, the foreman a mild, ineffective, and well-intentioned nonentity, but both are "authority figures." The young man's resentments toward authority, as embodied in his father, can easily, and frequently do, displace onto the foreman. This is not because the foreman is arbitrary or demanding. It is simply because he, like the father, symbolizes authority. (This, incidently, explains why so many young people are drawn to Communism which purports to be dedicated to the destruction of intrenched authority.)

The second factor influencing feelings is the extent to which these attitudes are the products of deep-seated needs (many of which are not socially acceptable), hostilities, and anxieties. The high emotional toning which many of them carry likewise gives them a somewhat irrational quality. This is because their roots extend far back into the individual's infancy, and they have retained many of the prelogical characteristics of the child's thinking. They have been formed and colored by early environmental and subsequent cultural influences.

Among these influences are such factors as the individual's cultural heritage, economic level, occupational status, education, character of associates, political beliefs, and specific experiences on the job (relations with supervision, the union, etc.). Of particular significance also are the characteristics of the persons with whom he has identified himself in the course of his development. (If the ideal he strove to emulate was John D. Rockefeller, he would have radically different attitudes toward management than would be the case had John L. Lewis been his hero.)

The Menace of Inflexibility

Because the roots of most of everyone's attitudes are deeply buried in his past, their sources, even their very existence, are almost entirely unknown to him. Furthermore, because of their long standing they are also practically immutable. They have become firmly embedded in his personality. The holder will, in consequence, defend them literally to the death. He does not know he acquired them; he is not even too greatly concerned about their consistency or logic. He is convinced of one thing only: *What he believes is right.* Such mental sets as these are encountered frequently in the field of politics, e.g., the unreconstructed Democrat who still votes as his pappy did and whose motto is: "Right or wrong, I'll always be a Democrat." Unfortunately, such firmly held attitudes are not confined to politics; they are equally common in the field of labor-management relations.

As a result, neither workers nor their union representatives nor members of management can approach most of the issues on which conflict exists objectively and with an open mind. Each has his own particular constellation of attitudes on every topic. Furthermore, each is not only convinced that his attitudes are the only right ones, but that any opinions which differ from his are *irrevocably and indisputably wrong.* This makes agreement almost completely impossible.

Since neither party to the dispute actually has much solid, factual ground for his opinions (he is probably discussing the "interpretation" of the facts at issue), he is more likely chiefly to be expressing his *attitudes.* Hence, it is obvious that any meeting of the minds will be difficult to bring about. Not only will each party to the dispute find it difficult to place himself in the position of the other, but assuming that one or the other tries, he will still have difficulty in accepting the viewpoint of his opponent.

Thus, the major problem facing industry, if it is to enjoy labor peace and the benefits of good employee morale, is a twofold one: First, it must stimulate a higher degree of empathy in its supervisors and executives to improve their immediate handling of their interpersonal relationships. Secondly, it must arouse management to a clearer awareness of the part that *its own* attitudes play in clouding and biasing its analysis of the labor relations problems with which it is faced.

Management Initiative

Most important, it must recognize that *the initiative for improvement in this area must come principally from management itself,* first, because emphathy is one of the prime requisites for success as a supervisor or executive and secondly, because neither the mass of the workers nor their union representatives, generally, have any reason to be aware that there may be an element of illogic in their attitudes and beliefs.

The unions, being part of a "movement," rarely question the essential rightness of their goals and the means employed to gain them. The majority of the workers and their representatives are still comfortably but implacably convinced that *their* viewpoints are invariably the only correct ones. Hence, they cannot be expected to see any need to question the soundness of their beliefs, much less take the initiative to change them in any way or to recognize that the employer's position may have any merit whatever.

Even within a presumably enlightened management group, the difficulties of stimulating a greater degree of empathy will be great. To begin with, if a supervisor's or executive's insensitivity to the feelings and needs of others is actually symptomatic of a deep-lying personality deformation, of a basic incapacity to invest affection in others, no amount of training or admonition will be of much help. Such persons must be recognized as inherently incapable of empathy. Situations such as this must be faced realistically. A George French can never be given much empathic insight.

On the other hand, if supervisors such as he are recognized as empathic cripples, their capacity for harm can be minimized. As far as possible, they can be taken out of line, administrative positions and given staff responsibilities. There they will have little contact with people, but can concentrate all of their efforts on *things* (production, engineering, accounting, etc.). If it is impossible to relieve them of administrative responsibilities, their personnel activities can be audited periodically by contacts with their subordinates (using exit interviews, follow-up interviews, counseling sessions, and periodic opinion polls) to discover, correct, and forestall their more egregious blunders in the field of human relations.

Where there *is* demonstrated capacity for empathy among them, much can be accomplished to make middle and top management aware of its nature, the need for it, and what it can accomplish in bettering human relationships. At the same time, it is essential that a recognition be given top and middle management of the magnitude of the dif-

ferences which may exist between their beliefs and attitudes on various aspects of company operations and those of lower level supervision and the rank-and-file employees.

Since the nature and range of these differences are frequently unknown to both parties, it is desirable to bring them to management's attention. This will often eliminate sources of misunderstanding and friction and at the same time illustrate, often dramatically, the variety and character of existing differences in attitudes between groups.

Both of these objectives can be attained by conducting a study designed to measure objectively and quantitatively the nature and extent of empathic differences at varying levels in a business organization. Either as a part of an employee opinion poll or independent of it, a series of identical attitude questions are asked of members of top and middle management and of hourly rated employees.

Typical of such questions is the following: "Do you believe that the Taft-Hartley Law is a 'slave labor act'?" Each respondent is asked to give a categorical "yes" or "no" answer to indicate his personal opinion relative to the issue. Following this, he is asked to indicate what answer ("yes" or "no") a majority of his associates and peers will give to the same question. Next (if he is a member of top management) he is asked to state how a majority of the members of his middle management (supervisory) and hourly-rated employees will respond. Members of middle management are asked to indicate how they believe top management and the rank-and-file employees will answer, as well as to state their own opinions. The hourly-rated group is asked to report similarly on middle and top management as well as on themselves.

Assessing the Differences

When these responses are tallied it becomes possible to measure the extent to which:

1. Absolute differences in attitude toward each issue exist among the three groups.

2. Members of each group understand (are empathic to) the attitudes of:

a. Their own (their peer) group.

b. Groups ranking above and below them in the organization.[1]

It is often a shock to members of the various groups, particularly those in top management, to discover the magnitude of existing differences in attitudes at the various levels. They are frequently even more seriously disturbed to learn the degree of their own errors in estimating the attitudes of the members of other groups. Findings of this character, as indicated, present graphically and dramatically the range of the differences in opinion existing among employees at different levels in the enterprise and the frequent lack of insight into the attitudes of others by various management and worker groups. These findings can then serve as a basis both for training top and middle management in the nature and importance of empathy and for highlighting significant differences in attitudes among employee groups. Once these distinctions have been established, management can take constructive steps to discover the reasons for them and to minimize their effects.

Empathy is a critical factor in a wide variety of activities. The physician with a fine "bedside manner" is merely an individual with a strong inherent "feel" for his patients' needs, problems, and anxieties. He senses them largely by intuition, but, as a result, is able to respond to them with keener insight and hence greater effectiveness than does his colleague to whom his patients' complaints represent merely a formal catalogue of symptoms.

Most truly successful salesmen are empathic to a high degree. While they are rarely aware of the part empathy plays in their effectiveness, its contribution is a major one. It enables them intuitively to sense the prospects' true (as distinct from *stated*) needs. They then direct their sales presentations to showing how their products satisfy these more basic needs. In short, they have a resonance, a sensitivity, to the prospects' emotional as well as rational needs and respond predominantly to the former.

They then use logical appeals only to *rationalize* (justify on logical grounds) the use of their products to gratify needs which are never even made articulate but which the salesman can sense empathically. Such persons are invariably more successful than those who, being incapable of empathy, must rely wholly on purely logical appeals directed at obvious needs.

Element of Leadership

All really successful leaders, including every dictator, have great empathic sensitivity. The esence of leadership of the masses is the deveolpment of an intuitive awareness of what they need and want. As most groups of this type are notoriously inarticulate, the leader must sense their needs instinctively, i.e., by empathy. He does this by placing himself in their positions and thinking what he himself would want under those conditions.

Knowing their needs, he can then chart a course designed to give them what they want and also justify his program. He may claim authorship for his plan himself, but the true roots of the appeal of his program are to be found in his *empathic awareness of what the group wants*. He insures that his followers will respond to his commands because in so doing, *they are actually only doing what he has sensed they have wanted to do anyway*.

This was the secret of Hitler's power over the German masses: Being of lower middle class background himself, he knew what they needed and wanted. He simply promised that if they followed him they would have what they wanted. The secret of his success lay in the fact that he was *emotionally in tune* with his followers. In consequence, whatever he demanded of them was what they desired to do anyway, regardless of its illogic, its nature, or its consequences.

Because of the tremendous power of this intuitive type of leadership and the great, albeit ordinarily unrecognized, cost of the failure of management and supervision to see others' problems from their points of view, the need for empathy must be of constant concern to management at all levels. Top management must look at itself objectively and appraise its own capacity for empathy.

In evaluating the competence of members of middle management, the ability to understand and respond to the needs and problems of others must be given a weight equal to that given to technical

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[1] For a discussion of the problem and the potentialities of this technique, see Rammers, H. H., "A Quantitative Index of Social-Psychological Empathy." *Amer. J. Orthopsychiat.* 1950, 520, 161-5.
Anikeeff, A. M., "Reciprocal Empathy: Mutual Understanding Among Conflict Groups." *Purdue University Studies of Higher Education.* 1951, 77, pp. 1-48.

skills and productivity. Great reluctance must be shown to promote anyone to an administrative or supervisory position who has demonstrated an appreciable incapacity for empathy. Regardless of his other qualifications, if he is an empathic cripple, he will experience difficulty in handling people. He can never be truly effective as a leader without some ability to sense his subordinates' needs and problems. He can function only as a dictator in a completely regimented, authoritarian autocracy.

But as all totalitarian regimes have discovered to their sorrow, slave labor is rarely efficient and productive. *Participation* by subordinates is vital if their creativity and effort is to be maximized. But participation is impossible in an autocracy, particularly where the supervisor is incapable of empathy. If participation is to be encouraged, the leader must be capable of establishing and maintaining rapport with his subordinates. This he cannot do if he has no capacity for empathy. Therefore, empathic sensitivity is vital to effective leadership at all levels. Without it, no supervisor or executive can get the most from his people.

Even more vital is the role of empathy in resolving the conflicts which arise from differences in *attitudes* toward specific issues or company practices. If management representatives are incapable of empathy, it will be natural for them to assume that there is no question concerning the essential rightness of *their* positions on every issue. In short, they will be completely intolerant of the opinions and positions of their subordinates and the latters' union representatives.

Because a lack of empathy for management's viewpoint is also to be expected on the part of these employee and union groups, the result can rarely be other than a continuing and bitter deadlock. Often the consequences of such conflicts are both costly and distressing, taking as they do the form of slowdowns, work stoppages, limitations of output, theft, insubordination, abuse of equipment, and generally substandard morale.

A Reasonable Approach

Granting that management personnel has at least some empathic sensitivity, its reaction to a conflict situation will be to attempt to be reasonable. When confronted with a conflict of attitudes as in the case of time studied incentive rates or promotions on merit rather than on seniority, it will not immediately adopt a two-valued orientation, i.e., assume that everything is absolutely right or absolutely wrong and that it has a monopoly on being in the right. It will grant that not everything is completely black or white; there may be some grays. It will further admit that it may be at least partly in the wrong. Most important, it will seek to ascertain not only what the employees and their union representatives believe and want, *but why they have these particular opinions and make these demands.*

Furthermore, its approach to such conflicts will not be doctrinaire. It will honestly seek the truth; it will not be looking solely for substantiation of its firmly held convictions. Such management really wants to learn the facts, even though they may perhaps be personally embarrassing and may pose difficult problems. In short, this type of top management may discover that its people actually have compelling and valid reasons for their beliefs and for making their demands. It can also discover that many of its own cherished opinions are not only incorrect, but are positively harmful.

It's Up To Management

The key to the resolution of these attitudinal conflicts lies, therefore, in the ability and willingness of those who determine company policy to try objectively and without passion to see both sides of the problems which face them. And, as already indicated, *the initiative must come from management.* Only management is in a position to correct many of the conditions which create or exacerbate employee ill-will and feed the fires of their hostility toward itself and what it stands for.

This, in turn, presupposes that relatively clear channels of communication exist between top company executives and the workers. The most empathic executive in the world is not going to be able to put himself in his subordinates' places if he is unable adequately to communicate with them. While it is customary to think of the chain of command, the hierarchy of supervision, extending from president to laborer, as offering a clear channel of communication, a little reflection will indicate that this is rarely the case.

There are too many barriers to communication and sources of distortion in such a hierarchy. (The chief of these is the desire of each of those in each echelon to impress *his* superiors with the superlative quality of *his* performance. Hence, nothing is permitted to come to his superior's attention which might raise embarrassing questions about *his* competence.) Therefore, the line organization must be supplemented as a dependable channel of communication.

Likewise, for a number of reasons, the union hierarchy rarely provides a clear channel of management-employee communication. To begin with, the union is rarely an impartial, disinterested agency. Many of the issues in a conflict situation are ones toward which it is vehemently partisan. Furthermore, many unions themselves are rife with factionalism and internecine strife. Precisely what will be communicated will depend greatly upon which faction is in power. These internal difficulties, therefore, seriously affect a union's value as a dependable medium of management-worker communication.

"Talking It Out"

If management is to obtain a comprehensive and valid picture of its employees' opinions and attitudes and their sources, it must provide facilities for them to talk them out freely, at length, and without reservation. This generally excludes counseling conferences with supervision (relatively few foremen, department heads, and even executives have the skill, time, patience, and empathic sensitivity to make such contacts successfully).

Only persons who have demonstrated a high degree of empathy and who have been trained in the use of the unstructured, open end or nondirective interview can be used. Interviews of this type should be conducted with all employees (including supervisors) at regular intervals. All new employees should be interviewed a few weeks after starting on the job; older employees should have a counseling interview at least once each year, and all employees on leaving should be given an exit interview.

Ideally, an opinion poll should be conducted biennially to provide a static cross-section of employee and supervisory attitudes as a control on the findings of the less formalized proced-

(Continued on page 34)

Is absentee ownership being compounded by absentee labor relations? The author feels your labor relations program has no place in the courts. He suggests you . . .

Keep Your Labor Relations Program Where It Belongs — In the Shop

By LOWELL F. JOHNSON

AMERICAN labor has been traditionally suspicious of a legalistic approach to labor relations. This suspicion has an historic basis in fact because of the early unfortunate experience of labor with English Common Law. Hence agencies set up in recent years to deal specifically with labor matters have been administrative and, in the main, of a non-legalistic nature.

The National Planning Association, after a study of the underlying causes of industrial peace in nine companies in several different industries, concluded, "Neither party to bargaining can adopt a legalistic approach to the solution of problems in the relationship."

The Paradox

Now a paradox has developed. The Third Court of Appeals has criticized the National Labor Relations Board for "excessive legalism." At almost the same time a former high government official suggested that the work of the N.L.R.B. be turned over to the courts. The average worker, who has hoped for years to see a simplification of the agreement which frames the terms and conditions of his employment, must, indeed, be confused. Should labor problems be settled in the shop or in the courts? Is absentee ownership being compounded with absentee labor relations?

The problem of spelling out explicitly the fact that workers, including present employees, have 30 days—following execution of the contract—in which to join the union is a complication that has plagued many unions and companies in union shop situations.

The Court of Appeals, vacating a Board order requiring Local 622 of United Electrical Workers to relinquish one of its union shop agreements, says the 30-day escape clause "need not necessarily be expressly included on pain of invalidating the entire union security provision."

The case involved Stupakoff Ceramic & Manufacturing Company, Latrobe, Pennsylvania, in which the Board agreed with the recommendations of its trial examiner. The Board and the examiner said that there was a fatal flaw in the union shop clause because it failed to incorporate the Taft-Hartley Act's requirement that an employee shall have 30 days to join the union. The Board ruled that the discharge of an employee who failed to join U.E. 30 days after the contract went into effect was illegal because the contract was illegal.

The Court did not agree with the Board's reasoning and said that the 30-day requirement was "but a temporary transitional provision which, although it must, of course, be read into every such agreement, need not necessarily be expressly included on pain of invalidating the entire union security provision." Judge Maris then concluded, "Collective bargaining agreements are not to be so strictly and technically construed. They are *practical working arrangements* frequently drawn by laymen unschooled in the niceties of legal craftsmanship." [The Judge could have said that they must be understood by men in the shop.] "Where, as here, such a contract exhibits substantial compliance with the statute we cannot hold the union security clause to be void." What happens to the contracts already voided by the Board under their original reasoning on this matter? Regrets are also legal. The charge of "excessive legalism" seems well founded.

Recently a former deputy attorney general seriously recommended the abolition of the National Labor Relations Board with the alternative that labor cases be processed in the courts. The recommendation, believe it or not, has received much favorable comment. The reasoning seems to revolve around the long time belief that the Board was set up for the exclusive use and benefit of labor and that management has no fear of or concern about the objectivity and fairness of the courts. It would appear that the changes made by the Taft-Hartley Act have not satisfied all concerned with respect to the conduct and function of the Board. A member of the House Labor Committee recently told a meeting of businessmen that the Board had gone against the intent of Congress in interpreting the law "to an almost shocking extent."

Just Employee Representation

In the same vein of legalistic solutions to labor problems, a Chicago attorney recommends to Congress that the Taft-Hartley Act be revised so that unfair labor practices would be adjudicated in the courts and leave only the handling of employee representation cases to the N.L.R.B. He charged that, "The Board has been legislating constantly and frequently inconsistently with Congressional intent," and further indicated that, "This trend has persisted in spite of changes in Board membership." He concluded that "an objective appraisal compels the conclusion that the administrative tribunal, although frequently checked and rechecked, has more or less steadily deviated from Congressional intent and that the product it has turned out has been, by and large, a pro-union product."

And so it goes! All of the foregoing clearly illustrates that we have steadily drifted from basic labor relations. They have their genesis in the shop and you will probably agree that they should have their solution in the shop—certainly not in the courts!

How Well Do You Pass the Word Along?

By PAUL R. BEALL

If you don't do it well, you won't succeed. Communications means the spoken as well as the written word. Author Beall develops a fourfold interdependency for effective communications. Check yourself against his list.

For as long as men have possessed language, they have appreciated the importance of being able to pass the word along. One of the earliest stories recounts the activities of a combine of men engaged in the building of a high tower. However, the Lord decided that these men had an evil purpose, so He "smote them with a confusion of tongues," and project Tower of Babel went out of business.

Today all business would fail as quickly, no flight schedules would be met, no milk delivered, no houses built, were we suddenly smote with even a little more confusion of tongues than we already have.

Recently I sailed as an observer on one of our Navy's great super aircraft carriers. I had an opportunity to inspect this mighty fighting ship from the bakery to the brig.

Didn't Get The Word

One morning I attended the Executive Officer's preliminary hearings of cases up for disciplinary action. A young sailor, with a previously unblemished record, was in trouble for having missed a muster. "To miss a muster is a serious offense," said the Exec, "I think that I shall have to refer your case to the Captain's Mast for disposition. Have you anything to say?" "Sir," replied the sailor, "*I didn't get the word.*"

With this the Executive Officer's whole demeanor changed. He said that that was another matter and he would hold his action pending further investigation. "If a responsible person failed to get the word to you, he is in trouble," said the Exec. "But," he added, "if I find that you *did* get the word and still missed muster, you are in worse trouble."

As an uninitiated landlubber, I was interested to discover that "pass the word" has long been used as a formal order aboard ship, the burden of responsibility resting with the passer. This is reasonable because when hearers or readers do not understand, it is not that they are stupid. It is because the speaker or writer is not clear.

Nor does all "confusion of tongues" relate to the problem of *passing*. The word itself can give trouble. In another familiar Biblical reference, St. John begins, "In the beginning was the Word and the Word was God. . . ." Theologians have a satisfactory explanation for this statement—they say that "Word" here is a synonym for God, but note also that the Greek word for "word" in this quotation is *logos* meaning intellecual reasoning. It has occurred to me that the quotation dramatically illustrates how the very existence of a theological concept, or any abstract idea (as well as its verbal expression), may depend upon labels called words.

A confusion here, of course (as learned philosophers have already noted), is that the mere word may be mistaken for the thing labeled. For example, I have chalked the word GOD on the floor in the doorway of a classroom. Most students who chance to see the word as they enter will conscientiously avoid stepping on the chalk marks. In the students' perceptive comprehension, how much are God and label and God the idea (or meaning) one and the same thing?

The crux of the matter, at least as far as the problem of communicating is concerned, is that the meaning of a word resides in two places: in the mind of the speaker or writer and again in the mind of the hearer or reader. When the word is assigned the same meaning in both places, the speaker and hearer or writer and reader successfully communicate with each other.

Communication Defined

Communication, as we shall define that term for this discussion, refers to communication that is effective because it influences people; it influences their attitudes, understanding, or conduct. The communication (speech or writing) that we are talking about has a purpose to be distinguished from the purpose in literary expressions where a poet, let us say, might be primarily concerned with satisfying himself.

Self-expression is rarely the primary purpose of an executive's speech or writing. Results, or lack of results, may make him feel as if he has been talking to himself, but his communicative purpose is usually to get others to act—to believe, understand, and to do.

I think that this *activating* variety of effective communication depends upon a fourfold interdependency as follows:

1. *Effective communication must relate to the satisfaction of needs.*

What is the relevant brass-tack information that the individuals addressed *need* to know? Who *needs* to be informed? For example, the who being addressed are factory workers. Typical questions that workers might *need* to ask management are:

> How am I doing? How is the company doing? Where can I borrow ten dollars? What good are industrial engineers? Will I go on an incentive rate soon? Why isn't my machine fixed? Why wasn't my suggestion accepted? When do I get a vacation?

2. *Effective communication must be sincere and open.*

Taboo topics must be recognized and put out on the table and labeled, "These are taboo topics. Yes, your question is a good one and there is an answer, but at this time it cannot be published. Please trust us." Any attempt to soft-soap a taboo topic is always a failure.

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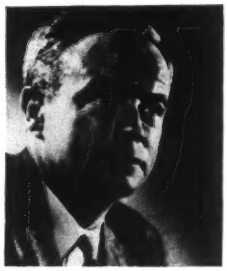
*A presentation made by the author at the Sixth Annual Conference on the Administration of Research held at Georgia Institute of Technology, in Atlanta, on Sept. 8, 9, and 10, 1952.

HIGHLIGHTS ON THE AUTHOR

Paul R. Beall, Ph.D., is on leave from Penn State College, serving as Scientific Advisor to the Commanding General, Air Research and Development Command, USAF. He had been Director, Information Division, Research and Development Board, Dept. of Defense. At Penn State, he teaches both in the Industrial Engineering and Speech Depts.



3. *Effective communication must be an active (not a passive) process.*

The channels of communication must be designed (and used) to accommodate the flow of information in both directions. These relationships may be along the line, between staffs, between the line and staff, up, down, across, and angling.

I am very interested in this two-way-flow requirement because it permits the listener or the reader an opportunity to sass back, and an opportunity to sass back is more than a right. It is an imperative necessity of effective communication.

Communication is not a stream; it is more like a ping-pong game. No group of people have ever been more interested in language than the classicists, particularly the Romans. One of their most successful teachers of rhetoric and speech (probably the greatest speech teacher of all time, and the first to define the purpose of speech as "to communicate") was a Latin by the name of Quintilian who lived about 100 A.D. He was a lawyer and conducted a law school. Most of his curriculum had to do with the problem of writing and arguing the law case.

Quintilian took children when they were very young. In his curriculum there were many electives, but for the little children there were two interesting requirements, No one skipped these two courses. As a fundamental part of their training for public speaking, all of Quintilian's young lawyers took boxing and fencing.

The exchange of blows in boxing may be compared to the active give-and-take pattern in effective spoken communications. A boxer understands this ping-pong pattern. A woodcarver or a peach packer might be puzzled by it.

Many speakers whom we hear nowadays suggest that they have great potential as peach packers. However, an audience is not like a pile of peaches. The peaches won't move. An audience is always doing something. It may listen, or fall asleep, or go home; but it always does something. Speakers who understand the requirement that effective communication must travel on a two-way channel are constantly aware of what their audience is doing, and they adapt their discourse accordingly.

For example, a speaker might say, "We have seen the last of the battleship." Some in his audience will agree, and others will marvel at how wrong a man can be, and still others will be curious and wish to hear more. The speaker who senses these silent reactions and responds to them is communicating on an active, open, effective, two-way channel.

4. *Effective communication must follow the selection and use of appropriate channels.*

There are many communication channels. My illustrations thus far have related to public speaking. There are other speech channels—the conference, panels, symposia, and briefings, to mention several. Written communications may take the form of a letter, reports, bulletins, plant papers, even monographs.

Communication may flow in a technique like the psycho-drama. The squawk-box, telephone, television, and public address systems are mechanical channels. Suggestion boxes or the grapevine may be used to get the word around. Information is communicated by plant appearance, uniforms, and insignia. There are countless communicative channels, and the measure of merit for any channel is appropriateness.

The Menu Muddle

Beginning with the problem of speech preparation, I wish first to discuss the matter of "menu muddling." Please recall to your memory the bill-of-fare from some world famous restaurant. It could be Miller Brothers in Baltimore. The menu at Miller's is as extraordinary as the food there is delicious. There may be 18 meat entrees and as many as 11 different crab dishes offered on the same day.

Please consider with me an analogy: Dr. Wise does not own a restaurant. He is a vice-president in his company and director of their famous physics research laboratory. The whole program of work under way in his laboratories adds up to a menu as impressive comparatively as the bill-of-fare at Miller's. Dr. Wise's annual operating budget is more than a million dollars. Over 100 scientists work for him. His projects and contracts representing work-in-progress are numbered by the score. His work with the Government is of vital importance to both the immediate and future welfare of our country.

Suppose these two cases: A guest calls at Miller's and says, "I can only spend an hour with you, but I would like to learn about the food at your restaurant." The other case, a Finance Review Committee of the United States Senate calls on Dr. Wise. They say, "We wish to listen to you for one hour. Please tell us about the work in your laboratories."

The manager at Miller's might cook up 86 dishes and mix 14 drinks and say, "Hurry! Hurry!" One hour is time enough, if you hurry, to savor one bite of each of these dishes and take one sip from each of these drinks, then you will know about Miller's; but you must hurry!"

Or, he might exclaim, "Only one hour! That is hopeless. No time to eat anything! Here, for one hour just read the menu."

I chanced to be at the zoo one day when they were giving the 19-foot boa constrictor his semiannual feeding. Seven men held him out straight while two others stuffed rabbit carcasses down his gullet with a long pole. In desperation, Miller's might try something like that.

It is obvious, of course, that Miller's management would offer their menu, prepare their guest's selections, and gamble their institution's reputation (and risk judgment on their *entire* menu) on just *one digestible-sized* meal, skillfully prepared and exquisitely served.

Turn now to Dr. Wise. All of my years of experience as a management consultant support my conviction that Dr. Wise will have neither the nerve

nor the good judgment to risk his all on a presentation of *digestible* proportions. He will talk rapidly, he will stuff with a long pole, he will plaster the room with charts, he will show a movie and flash magic lantern slides, and before the hour is over he will sweat, and he may swoon. The Finance Committee will say, "Wheeooee! I wonder what is going on up in Dr. Wise's physics laboratories? Perhaps we had better reexamine his budget grant proposals for 1954."

There's Never Enough Time

There is never time enough to serve the entire menu. There is never time enough to tell the whole story. This is fortunate because listening appetities have limits the same as hunger appetites. Accept it as axiomatic that one need not eat a whole cow in order to know the taste of beef. Step one for Dr. Wise, in preparing his ultra-par quality presentation, is to make a decision. He must examine the menu (his program) and then with boldness and firmness select a meal. He must decide to serve a meal rather than the menu.

The dishes for his meal selected, Dr. Wise must decide what to serve first. It is remarkable how natural it is for us to do things in an inartistic and ineffectual manner. The natural approach suggests a one-year-old's first attempt to feed himself a bowl of mush, or a gorilla trying to play a violin. Over 200 years ago, before the word's meaning had evolved to its present use, critics looked at a beautiful painting and commented, "Excellent—very artificial."

It would be natural for Dr. Wise to begin, "Gentlemen of the Committee: We have had a successful year; we have spent your money wisely and we have accomplished good works." This statement is a conclusion, and a conclusion is a challenge to a fight, or, at best, the beginning of an argument.

Suppose, for example, husband comes down to breakfast and wife tees off with, "John, you have been drinking too much." (True, too.) Husband may do a number of things. He may hit wife or he may leave the room. Being hungry (and thirsty) he more likely will drop an iron curtain in his mind that shuts out background noise and remain to eat in glum silence.

Another wife with more feeling for the artistic way of doing things would begin with *facts*. "John, last night at the Boss's party you spilled your coffee on Mrs. Boss. Just wondered if you remembered. And John, the garage. You'll be a little surprised when you see it. You didn't stop quite soon enough last night. It's possible to drive into it from either direction. And John . . ."

My point is that conclusions will state themselves if the facts are clear enough. Another case: Dr. Don Flickinger, distinguished physiologist now serving as Colonel in charge of the Air Force's research work in Human Factors, was called by an Advisory Review Board to present a 15-minute briefing on the year's work in his command.

Colonel Flickinger did *not* begin his briefing with a conclusive statement. He began (using exact data of course), "Members of the Board, on last "X" date, out at White Sands Proving Ground, we shot a "Y" missile "Z" miles into the air. This missile attained a speed of "L" times the speed of sound and developed a skin temperature of "M" degrees. During this flight, Molly, our monkey, was on board. We recovered the missile, and Molly, somewhat shaken, was found to be still percolating normally.

"This experiment was important to us in Human Factors research," continued Colonel Flickinger, "because it demonstrated that an animal can endure these experiences, and it allows us to prognosticate that a man could do the same.

"This experiment," said the Colonel, "is a typical example of our work in Human Factors during the past year, and I will now brief you on a number of our other projects."

Beginning as he did, *with facts*, Colonel Flickinger, accomplished a number of things in his first 30 seconds of speaking. He secured the unprejudiced attention and interest of his audience; he identified the subject of his talk; he showed that interesting and profitable research work was under way in his field; and he established himself as a first rate speaker. That is better than par for the first 30 seconds. Fifteen minutes was adequate time. The Colonel's talk was a success.

We have had Dr. Wise select the dishes for a meal from his menu and have urged him to serve facts for his first course. How many courses ought there to be? How many parts has an effective speech? Remember the number *four*. A time-proven and effective speech plan, or design, or form is the four-part structure.

Informality suggests humor and a friendly manner; but formlessness is chaos. Build the speech on four pillars: Introduction, purpose statement, body, and conclusion.

Speakers fail because they neglect a firm decision. I think speakers should tell their audience what they plan to do, where they intend to go; but certainly they should have a clear and definite agreement with *themselves*. Speakers ought not to stand up and talk until their time runs out in the hope that they will hear their mouths articulate what they ought to say.

Serve the Meal, Not Menu

In discussing the problem of preparing for the talk, I have urged that the speaker take a bold stand and determine to serve a meal rather than the menu; that, in formal presentations, he lead with the facts; and that his speech, like a house, have a functional structural design.

At approximately this point it will occur to Dr. Wise that, in agreeing to brief the Senate Committee, he has undertaken a difficult task. Then, it will occur to him that he is an important executive and a very busy man, and the thing to do is to delegate, to hire John Alden, to call in a logographer—that's Greek for ghost.

There are several public responses to ghosted speeches. Some feel that a man who uses a ghost is a cheater. This old-fashioned notion is probably grounded in school-day memories. A friend told me recently of an experience he had had while a student at Virginia Military Institute. During an eerie midnight muster, while a muffled drum rolled as if for a funeral, orders were read expelling a student. The orders stipulated that he was never again to set foot on the campus, and all he had done was present a ghosted paper as his own.

Then there are some with an ironical turn of mind who find the ghosted speech amusing. When American University recently added a course in ghost writing to its curriculum, Hugh Troy, characterized by E. B. White as, "veteran of many a satirical mission," advertised in the *Washington Post*: "Too Busy To Paint? Call On Ghost Artists. We Paint It—You Sign It. Why Not Give An Exhibition?"

A third consideration on the use of

ghosts is that, as surely as time wounds all heels, time will find the forgery out. In fact, the audience usually knows the truth about a ghosted speech at the time of its presentation. It would seem that the illegitimate parentage of speeches is a secret kept with difficulty.

If the ghosted talk is a poor one, the audience will say, "What kind of judgment does old Doc Wise have—hiring such a stupid ghost?" If the talk is first rate, the audience will comment, "Old Gordon the Ghost has never been better!"

The most critical objection to ghosts is that Dr. Wise is better able to speak his own piece than anyone else can possibly speak it for him. He holds his present position because he is a wise and competent individual—the best man for the job. If this is not true, he *should* find a ghost—and trade jobs with him.

Critic-Teacher-Coach

For all of the hard words that I seem to have for ghosts, I do not mean to imply that Dr. Wise may not need some help. Most everyone needs some help. Golfers who shoot par but wish to move on to tournament class, call on the Pro for help. As there are golf pros who specialize in helping par shooters, Dr. Wise can find a critic-teacher-coach who is competent to understand his problem, evaluate his material, and criticize his language and delivery. I must add that the teacher's role is as noble as the ghost's is shady.

The whole mission of a teacher is to help; to encourage and inspire, to bring out the best. A ghost in the background beclouds the performance, but a teacher shares in his pupil's success without borrowing from it.

For example, Maureen Connolly, mighty "little Mo," who won her first U.S. Amateur Tennis championship on September 5, 1951, two weeks before her 17th birthday. After the game, the fans cheered and said, "She's great!" A smaller and more knowing group of fans also said, "She's great." But they were talking about Eleanor "Teach" Tennant, who had coached Maureen since she was twelve. Other champions coached by Eleanor Tennant include Wills, Marble, Riggs, and Betz.

Ghosts and their front men contribute only their second best to each other, but teacher and pupil create a *synergism* (total effect is greater than the sum of their two effects taken independently). Dr. Wise may be wise to ask for help. Wives, colleagues, professional teachers, editors, even competitors can, and usually will, give helpful criticism.

Writing Practice

Now I would like to comment on the discipline of writing. As a boxer trains for his bout by sparring, a speaker prepares to face his audience by writing. Neither boxer nor speaker prepares a set routine. A boxing match is not a formalized set-piece like a ballet (though modern wrestling would seem otherwise), and the speech cannot be frozen like the lines of a play. Boxing and speaking, as we have already noted, are dynamic activities that function in a two-way, give-and-take pattern. Both boxer and speaker must train.

The only *known* way to acquire the disciplined use of language (and incidentally ability for the clearest thinking) is by the practice of writing. But there are some wonderful rationalizations.

Students with the language level of gibbons have come to me and pleaded that English Composition 201 ought not to be required of *them* because they won't need it; they are going to be scientists or engineers. Some of these geniuses have graduated. You who are their present employers will understand what I am talking about.

As a matter of fact, most great men write with a lucidity and language accuracy that is equaled only by famous poets. I have heard a colleague say that he wished he had the competency in nuclear physics that Bob Oppenheimer has in writing.

I am sure that to speak effectively one must practice writing. This is true even though competent writers are not necessarily successful speakers. Therefore, we come to the second portion of this discussion—the problem of *presenting* the talk.

Dr. Wise may feel that some visual aids would help, and I agree. The important things to remember about visual aids is the word "aid." "Aid" means to assist, but an aid is not a substitute. An aid cannot take over like "George," the automatic pilot on an aircraft, and run the show. Aids cannot reduce the talk's presentation to a series of involuntary reflex actions, like a sequence of knee-jerks. Even with aids, Dr. Wise continues to be the chief attraction; Dr. Wise, not the aids, will present the briefing. In fact, visual aids have some analogy to golf sticks. You might say that golf sticks are an aid to golf.

For example, a famous trick-shot artist held a golf clinic at our little country club. He said, "Now you must understand each club's purpose and use the proper club for a given shot." Demonstrating each shot exactly as he described it, he then used a number nine for a high drop with backspin; a number six to show both a controlled cut and a controlled slice; and a number four to demonstrate an into-the-wind shot—low and straight.

Then Mr. Pro drew an ancient antique club from his bag — a relic he had picked up in Scotland. The club head had some of the appearance of a wedge, but the face was almost as flat as a three. Joe the Pro placed four balls carefully on the turf. Using this freak club for every shot, he sent the first ball high and short with backspin, the second ball was a controlled cut, the third a controlled slice, and number four went low and straight for the wind. "Note," said the professor, "how much the person holding the club influences the shot."

Specifically, I would urge Dr. Wise to adopt a visual aid policy, at least as far as charts or slides are concerned, of using such aids only to explain matters that *cannot* be easily explained by words.

For instance, Dr. Wise wishes to recommend that a layout of new buildings follow ground plat "A" rather than ground plat "B". To be clear, he will need charts showing the two plats. However, when he comes to summarize (that plat "A" is the better layout because it would save time, cost less, and be more efficient), he ought *NOT* to flash a card listing these points:

1. Save time.
2. Cost less.
3. More efficient.

These three contentions are Dr. Wise's conclusions—*he* can express them better than a chart. Furthermore, it insults the audience's intelligence to have three words listed for them on a chart. When words will do, a chart is not needed.

Let Audience Work, Not Wait

I have the feeling, also, that speakers tend to show a lack of appreciation for their audiences' intelligence by speaking too slowly. Overly deliberate speakers

(Continued on page 34)

Should the engineer live in "splendid isolation," ignorant of all other aspects of company operations? Or does the awareness of management problems other than his own make him a better engineer? These authors declare flatly that. . . .

Engineers Need More Than Technical Training

By **MONROE BERKOWITZ,** Economist
and
GEORGE S. ODIORNE, Extension Specialist
University Extension Division, Rutgers University

INDUSTRY'S ANNUAL rush to the campus in search of engineering talent is increasing in tempo. Recruiters faced with a buyers' market have offered not only increased salaries, but also bonuses, tempting benefits, and promises of security to induce the bright young men of the Senior Classes to cast their lot with a particular company. This investment of time and energy in recruiting shows signs of paying dividends. Nearly one-third of the men entering college during the last academic year chose the engineering curriculum.

Most firms apparently recognize the necessity for recruiting and for devising programs to retain their present engineering staff. At the same time it is recognized that even the best graduate needs further seasoning and training before he can be entrusted with responsible technical work. The more astute companies carefully nurture the new talent, in sharp contrast to the old days when newcomers either sank or swam while their employers were confident that for every man who didn't make out, ten were waiting at the door.

Is In-Plant Training Enough?

The emphasis by many companies on in-plant training in the technical phases of engineering work is an absolute necessity, but is it enough? Do engineers need something more before they are equipped to do a good *engineering* job for the company which has chosen them?

A recent survey by the National Society of Professional Engineers showed that 85% of the employed engineers spent more than three quarters of their time on technical engineering work. Seventy per cent of the companies participating in the survey used engineers in nontechnical jobs, mainly in some managerial capacity. Most people would concede that an engineer who is employed in some managerial or administrative task needs some training in these skills, but what of the engineer who spends all or most of his time in technical work? Is pure engineering training sufficient for him?

Recent experience with management courses given to engineers as part of an in-plant training program would indicate not. In fact it is doubtful whether very much pure engineering work exists in modern industry.

Isolationism Is Passé

When the lone scientist worked in his isolated laboratory he needed little knowledge of the arts of cooperation, organization, and human relations. Unfortunately, however, such splendid isolation is simply not compatible with the finely drawn specialization implicit in 1953's research and development operations. Even the simpler projects require a team, and of what use is the most brilliant engineer if he cannot communicate his ideas and work harmoniously with the other members of the group?

Take, for example, the solution of a relatively simple problem in electronics research. The project team is given the task of producing a scanner which will express the variable X as a function of the variable Y.

The physicist, the mathematician, and the electronics engineer work out an approach together. They conduct experiments in certain areas, consulting with a mechanical engineer as they progress. When the project reaches the block drawing stage, they must consult with designers, draftsmen, machinists, and electricians. They must hold technical discussions with ultimate users; they must supervise the work of laboratory technicians and other engineers who will design the test equipment.

All this amounts to a complex network of human relationships; nor is this the end. The team will be required to make constant reports. Somebody in the company will be interested in how much money they are spending. If they are spending it too fast or too slow, some technically trained engineer must explain the reasons to some non-engineer.

The number and extent of these personal interactions extend further, but perhaps enough has been shown to indicate that where engineers are ill-equipped to make these dealings harmonious and pleasant, the quality of their technical performance will suffer. The failure to recognize the important role that feelings and instincts play in decision-making might interfere with the completion of the project on schedule just as much as poor engineering performance. In modern industry human skills and technical skills are inseparable.

A Case In Point

These problems and something of their attempted solutions can be illustrated by the experience of one company which on the surface provides an ideal example of a work situation in which the engineer should be able to

isolate himself from the problems of management. The company was organized by a group of engineers to do research and development in the electronics field. The only product sold was engineering research and development, and the sole customer was the armed forces.

To further guarantee against interference from non-engineers who might be imbued with petty commercial principles, the top men in the company, all engineers except one, were also on the Board of Directors. Here, if ever, was a model situation where the engineer could work with sympathetic consideration for his professional problems. Yet as the company grew with success, the inevitable problems of management became intimately wedded to the purely engineering problems and the company began to have difficulties.

Much of the conflict and confusion in the organization occurred not at the top level. One might expect the engineer-managers to have some worry over problems of finance, personnel, and policy-making. Most of the management problems occurred, however, in the divisions which carried on the actual research work. The engineers, whose sole apparent concern was converting physical laws and principles into engineering realities, found themselves ensnarled in problems of communication, organization, personnel relations, and human relations on a major scale. Conflicts and confusion were evident here far more than in the top echelons.

Conference Series

The company, recognizing the problem, called on the services of the State University, and two conference series were scheduled. The top management of the company met in one conference group while the project engineers and other technicians met in another. Although all groups followed roughly the same outline and agenda, the actual content of the conferences varied widely due to the differing viewpoints and interests of the respective groups.

Top management was more interested in organization, control, and administrative techniques; the engineering and technical groups in job relationships, company policies as they affected themselves, and factual matter regarding the company. Out of conferences and attitude surveys with the lower groups came information which provided thought-provoking material for the top management group.

Early in the series it became apparent that too many of the first-line engineers and project supervisors had an almost complete lack of understanding of elementary managerial problems and, consequently, resented what they did not understand.

The engineer who requested of his superior a new piece of test equipment which to him was necessary to carry out his technical assignment knew nothing of the problem of allocating a limited amount of money from the capital budget. To him a refusal meant that "they" don't appreciate "us." Management in turn was puzzled and somewhat hurt by this attitude and alarmed at the consequent ineffectiveness, indifference, and inefficiency which it observed in some of its research engineers.

Is Bookkeeping Necessary?

An amusing example of this lack of understanding was brought out in one session. Seizing upon an outspoken remark from the group that much of the structure and activity of the business part of the company was superfluous, the conference leader, an outsider from a university, asked provocatively which branch the speaker would truncate first.

"All this bookkeeping and paper work upstairs," came the heated reply. The conference leader used this and carried the point through to its absurd conclusion.

"All right," he said, "eliminate the bookkeeping paper work completely. Next week, we'll place a big box just outside the gate, fill it full of dollar bills, and on pay day each person will reach in and take out what he has coming to him. Cuts out all the paper work of payrolls."

This provoked a laugh, and a general agreement that certain records and reports are necessary if they were to stay in business and continue the interesting and important work of research and development.

Less obvious, however, was an appreciation of the fact that management problems which the engineers belittled at length might well be their own problems, and those of their subordinates. For example, a spot survey showed that a significant percentage of the engineers were dissatisfied with the promotion policy of the company. They felt that promotions were awarded on some basis other than merit, and that on occasion undeserving individuals were promoted while deserving persons were bypassed Upon questioning, the majority admitted that perhaps the individual promoted was well qualified for the job, but it was the method used which caused the unhappiness. What was resented most was the fact that the bypassed person was never told of the opening in advance and given an opportunity to "try out" for the post.

The conference leader then posed the question to the group: "Could this same shoe be pulled onto your own foot? How often have you mentioned an opening as a lab technician to a worker in the shop with a possible view toward his being readied for promotion?" Being intelligent they saw the implication immediately. The shortcomings which they recognized as unsatisfactory when applied to themselves, they seldom tried to apply to the people under them, and to their colleagues.

Need for Nontechnical Training

The implications of all this are evident. Serious defects exist in the training given engineers; and these shortcomings, although they are in nontechnical areas, have an impact upon their skill and effectiveness as engineers and technicians. Not only are the engineers themselves people, but a valuable part of their tool-kit as technicians is an ability to get things done through people. For this our present training of engineers is woefully inadequate.

A quick answer might be to add certain subjects to the engineering schools. Promising gains *have* been made in this direction, but this is a long range and controversial solution. Under present labor market conditions, management must accept engineers as they are turned out and hope for the best. Just as management has been willing to undertake further training of these men in the technical phases of their job, it must also be willing to educate them in the managerial and human relations aspects of their work.

More Management Participation

In one conference with some of these "pure technicians" a canvass showed that over 70% of them felt that they were part of management. Fifty percent indicated that they were interested in having a greater participation in man-

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Arbitration and the Handling of Grievances

By ARTHUR C. CROFT

The author tells you how to tighten your grievance procedure so that unnecessary grievances are avoided. His advice: "Don't be too stubborn on weak cases."

"PRACTICALLY all union agreements now in effect," says the U. S. Department of Labor, "make some provision for the adjustment of grievances, misunderstandings, and disputes which arise in the day-to-day working relationship of employers and workers. Experience with collective bargaining has led to a general acceptance of the following essentials for the adjustment of disputes which arise under an employer-union agreement:

1. Union - management negotiations, beginning with the foreman in charge of the shop or department where the dispute originates and proceeding up to the higher officials of the company,

2. Appeals, if such negotiations fail to secure an adjustment, to an impartial outside agency or individual, and

3. Restrictions on strikes and lockouts until other means of settling the dispute have been exhausted."

Although this statement was made by the Department of Labor in 1940, it is equally true today. At the present time it is estimated that more than 50,000 union contracts contain some kind of provision for the orderly handling of grievances.

Variance in Effectiveness

But not all of these provisions are equally effective. In many plants, grievance procedures are time-consuming, wasteful, stir up more disputes than they resolve, and lead to endless arbitrations. They cause management trouble, and cost heavily in time and money. It is my purpose to try to demonstrate: (1) How the grievance procedure can be tightened up and (2) How unnecessary arbitrations can be avoided.

Grievance procedures vary considerably—from simple two-step arrangements for small plants to elaborate, five-step-or-more setups for large organizations. The important point for both the employer and union is to agree on a procedure that suits their needs. Over-complicated systems will impede —instead of speed—the settlement of disputes.

HIGHLIGHTS ON THE AUTHOR

A former president of the American Arbitration Association, Mr. Croft, since 1937, has been president of the National Foremen's Institute. He was a founder of the Institute. The Institute is the largest and oldest organization in the country specializing in training and development of training programs for foremen and supervisors.

Standard Procedure

The standard grievance procedure allows for three or four steps or stages by which complaints, if they remain unsettled, are appealed upward until they come to the attention of top management. As a case progresses, the procedures become more formal, take longer, and involve more people and more lost time. It is the sensible course to design the machinery that encourages as much settlement as possible in the earlier steps.

Of course, there are certain management decisions which are not made by departmental foremen, and over which only top management exercises control. When such decisions result in grievances, it is reasonable that they should by-pass the first step or two and be taken up directly with the level of management at which something effective might be done. But most grievances are of the kind which foremen can adjust, if the foremen have reasonable authority.

When the departmental foreman — management's first-line representative— has real authority to settle disputes relative to his function it is usually a sign of a healthy relationship.

In some plants where management has a keen appreciation of the strategic role of its supervisory personnel, the foreman is required to sit in on cases which arise in his jurisdiction even after they have gone to the higher echelons of management for settlement.

Paper Work: A Necessary Evil

Grievance adjustment necessarily involves some measure of red tape and paper work, which management naturally wants to keep at a minimum. Yet, paper work in this connection does have a useful function which should not be overlooked.

It may not be necessary to write up grievances at the first step, when the worker and/or his department steward state their complaint to the foreman for the first time. But it has been the experience of many plants that when grievances are required to be written up for the second step, it results in the dropping of many frivolous or trifling complaints.

There is still another reason why grievances should be written up, at least for the last few steps. Written statements of the issue and the settlement, after awhile, form a pattern which contributes to the easier solution of other disputes of a similar nature which may arise. They also provide proof, if a case goes into arbitration, of the existence of established policy. In addition, they provide a check by management upon itself, by which slip-ups or discrimination may be prevented.

Adequate Time Limits

In the adjustment of grievances, as in so many other aspects of labor relations, time is of the essence. That's why it is customary for each step in the pro-

cedure to carry with it a time limit, at the expiration of which the dispute goes to the next stage.

This is as it should be. But management should be on guard to see that the time limit at the first step or two is actually adequate for a full exploration of all the facts and a real attempt at settlement by the foreman. The time limit should not be just an excuse to by-pass the lower echelons of management.

In certain types of grievances—those involving discharges for instance—special time limits may be needed. Fairness to the employee requires that such an issue reach top management with a minimum of delay. At the same time, a time limit may protect management against a heavy back-pay bill, if the ultimate disposition of the case requires reinstatement.

Arbitration

The great majority of union contracts now specify arbitration as the final step of the grievance procedure. When the parties themselves cannot agree, they call in an impartial outsider. Since the awards of arbitrators frequently determine company policies for the future, employers should be particularly careful in negotiating the clause providing for the settlement of disputes by this method.

Even when relations with the union are good, few contracts have clauses so broad that they permit disputes over the terms of a new contract to be taken to arbitration. Usually, arbitration is used to settle controversies involving the interpretation or application of existing contract provisions. The clause recommended by the American Arbitration Association engages the services of that organization in administering the arbitration and guards against a work stoppage while the dispute is being adjusted.

Very often a company prefers to exclude certain subjects from arbitration. Again the policy of the company will determine the subjects to be excluded. Usually they are issues more appropriate for collective bargaining between the parties, or else they are considered to be solely within the discretion of management.

Cutting Costs

The expense factor scares many a company away from arbitration. It is true that arbitration costs can run high, but there are many ways to keep them to a minimum. Here are some suggestions for economy:

1. Make provision in the contract for the company and the union to share in the expenses of arbitration proceedings. But be sure to include a proviso that each party pays the expenses of witnesses it calls.

2. Use single arbitrator instead of three-man board. Tripartite boards tend to inject too much pomp and pageantry —and cost—into an arbitration proceeding. Trend is definitely toward the single arbitrator who acts free from pressures by either side.

3. Forget about stenographic record of the proceedings. Unless the dispute is very important or very lengthy, most arbitrators are content to make their own notes.

4. If cost is paramount, make use of the facilities of the Federal Mediation and Conciliation Service or the mediation service of your state. These agencies ordinarily will supply lists of arbitrators and sometimes even hearing rooms without charge.

Union Stewards

The role of union stewards in the grievance procedure can be a problem. The primary chore of union stewards is to represent workers in the first or second stage of grievance procedures. To carry out this function the steward is permitted to leave his job during working hours.

To avoid unnecessary lost time, many companies place a definite limitation on the number of union representatives in the plant. One department or shop steward to 25 or 50 employees is quite common, although industrial departments with fewer workers usually also have their own representative. Often the ratio is set at one steward to one foreman.

Obviously, union representatives must spend some time during working hours on the investigation, presentation, and settlement of employee complaints and grievances. This time, within reasonable limits, generally is paid for by the company. Management gripes, however, arise when stewards and committeemen under the guise of grievance work, use company time to solicit new members, discuss strictly union business, or just generally stall and drag out inquiries on legitimate matters.

A number of firms try to curb these unnecessary costs by limiting the union contract the amount of time that may be spent on grievances by union representatives. For example, some pay for only three hours a week of grievance time.

Generally grievance committeemen who meet regularly with company representatives for the adjustment of grievances are paid for such time. But even in this case, limitations are sometimes imposed. Sometimes the union even splits the cost with the company.

Regulating Steward Time

Limiting the amount of time that can be spent on grievance work is one way of cutting down on-the-job activities of union representatives. Of course, there are other types of union business which are generally accepted as proper during working hours—for example, posting union notices on the bulletin board, acting as witnesses during an interview, reviewing the results of a time study.

Keeping track of these various activities, including the time spent on grievances, is essential if they are to be kept within prescribed or reasonable bounds. Accordingly, many companies require a union representative to report to his foreman before leaving his job to attend to union business and to report to him again before returning to his work.

Legal Considerations

The law too, enters into the grievance picture. The Taft-Hartley Law does not require a union contract to provide formal grievance machinery. An employer can, if he wishes, adjust differences with his employees without the "intervention" of a union representative. But if there is a union in the plant, its representative must be given an opportunity to be present for the adjustment—even when it's only a first-step adjustment made by the foreman. And any adjustment made must be consistent with the contract the employer has with the union.

In practice, however, a contractual grievance procedure can work out to an employer's advantage. Under a federal court ruling, a union cannot strike over a dispute subject to the grievance machinery until that process has been exhausted. Even in the absence of a "no-strike" clause, such a strike would be a breach of contract for which the employer could impose "reasonable discipline" on the employees.

Avoiding Unnecessary Arbitrations

In the administration of the grievance procedure, management representatives must be hard-headed; they must use common sense. Disputes, whenever possible, should be settled at low levels. And, before any dispute is taken to arbitration, the issues should be re-examined and the equities carefully weighed. It doesn't pay to be stubborn if you have a weak case, or to rely too heavily on "legalisms" in the union contract.

Take for example, the case of the company with a contract provision that made holiday pay dependent on work by the employee on the day before and the day after the holiday, unless work on such days was prevented by illness. Memorial Day last year fell on a Friday and certain employees were not scheduled to work on the preceding day as the company felt they were not needed. These employees were not paid for Friday because they did not work Thursday. The union protested, the company refused to budge, and the matter eventually went to arbitration.

The company's position in essence was this: The employees deprived of holiday pay were on layoff on the day before the holiday. Layoff was not specified in the contract as a reason for which failure to attend work on such day would be excused. Therefore the employees were ineligible for holiday pay.

The arbitrator who heard the dispute saw no virtue in the company's argument and held for the union. He said that the holiday pay rights of the workers would be nullified if the company for any reason it chose—except the one specified in the contract—could prevent attendance at work on either of the days surrounding the holiday. The employee could not be prevented from working and be blamed for it at the same time so as to create ineligibility for holiday pay.

Whoever advised the company to take this dispute to arbitration was evidently a believer in the old legal maxim that "what is not included, is excluded" in a contract. But legalisms like that do not necessarily hold in matters involving union-contract interpretation. Before taking that final step to arbitration, the employer should be sure in every instance that the equities are on his side—or at least equal.

Tight bargaining on all matters covered by the union contract is another way to cut down on unnecessary arbitrations. Many a dispute has gone the whole route merely because a vaguely worded clause permitted conflicting interpretations and neither party would back down. Or because management negotiators failed to anticipate and cover all the contingencies likely to arise on a particular topic.

As a case in point, take the dispute about seniority rights that developed recently at the plant of a large mid-Western manufacturer. The company had announced to its employees that normal operations would be suspended for three days at the end of the month to permit the taking of annual inventory. Certain junior employees were kept on during that period to aid in the inventory-taking, but the company claimed that this was a "temporary no work condition" during which the agreement allowed the company to disregard seniority rights.

An arbitrator said the company was wrong and ordered back pay for all laid-off senior men for the time they lost. He pointed out that the contract permitted management to disregard seniority in laying off workers only when "there is a temporary condition of no work available due to causes such as material shortages or trouble with machines or equipment." Such a temporary condition, the arbitrator held, is unplanned—but an inventory taking, which is planned and scheduled in advance, does not fall in the same category.

In collective bargaining, silence does not mean consent. Where management gives up a basic right—for example, as here, the right to lay off workers at will—it should pinpoint every situation in which the restriction will not apply. In the above case, management bargainers arranged for only one exception to the strict seniority rule. Then when a dispute arose, the company was obliged to rely on a strained interpretation of the contract language in an attempt to justify its action. Inventory taking is a common industry practice; layoff procedures to govern at that time should have been included in specific detail in the contract.

Improved Human Relations

Still another way to cut down on unnecessary arbitrations is to see that first-level supervision is well trained in human relations. Favoritism should be ruled out; plant rules should be applied equally to all employees. Disciplinary penalties should be fair and consistent. You can't always "back up" hasty, ill-considered action by a foreman or supervisor. And if you do, chances are you'll be reversed when the union takes the matter to an arbitrator.

Recap

That, then, is the story on how to get the most out of your grievance procedure. First, set up a system that is appropriate to the size of your company. See that it provides for the orderly—and speedy—processing of complaints. Impose restrictions that bar delaying tactics by unions. Be sure that the powers of the arbitrator are clearly defined and that provisions are included showing how the expenses of arbitrations are to be borne.

Then in the administration of the grievance machinery, try to cut down on unnecessary arbitrations. Don't take a dispute all the way unless you have a good case and the equities are in your favor. At the bargaining table, avoid vague clauses and those that permit conflicting interpretations. And last but not least, see to it that the first-level supervision understand their responsibilities as key men who can nip many an employee complaint in the bud and thereby save the company plenty in time, trouble, and money.

Correct Foreman Procedure

Many management conferences have been and are being devoted to the status of foremen and their training. Those who contribute to the thinking at these conferences seem to be in substantial agreement that, in regard to grievance handling, the foreman should be indoctrinated along the following lines:

1. *Receive the grievance properly.* The way you treat a man when he first comes to you with a complaint has a lot to do with the ease or difficulty of settling the problem. Give him your attention and keep your temper even though he may be boiling mad. Let him tell his story without interruption. Repeat the essentials in your words and ask him if you got it straight. If you have the facts straight, and if these facts and the circumstances surrounding them do not call for further investigation, give him your answer right then and there. But if you are not entirely sure, tell him

(Continued on page 34)

The Management Bookshelf

A Light, But Meaty, Look At Production Costs

How to Control Production Costs by PHIL CARROLL. 272 pages. McGraw-Hill Book Company. 1953. Price $5.00.

How to Control Production Costs is written primarily for industrial managers. However, because the work of management is distributed among many people, this is a book to be widely read. Certainly the points brought out are highly important to top management people, but they are also important to all who have responsibility for achieving and maintaining cost control.

In essence, Phil Carroll advocates a careful, analytical approach to cost control. He calls for determination of the facts but with proper regard for the degree of accuracy necessary for adequate cost control. He uses the engineering approach to the analysis of cost problems. With simple illustrations, Carroll brings out the ways in which cost figures are frequently misleading and points out how to avoid serious errors.

Want Facts or Fiction?

A never-ending source of amazement to those in industrial management who prefer facts to fiction is the extent of blind reliance placed by many managers and others on all kinds of averages and ratios. The author makes no claim that we should do without averages or ratios for control purposes. His plea is that they be used with the greatest of care. They should be understood in terms of all variables which affect them if they are to help not hinder.

Of primary importance is emphasis on conversion or value added by manufacture. The author brings out the relationship between measures of performance and conversion. Carroll warns against the unnatural separation of direct labor and overhead costs. They are parts of the whole cost of conversion.

Ratios of one in terms of the other are likely to be misleading. The author urges that all extra work and re-work be segregated carefully in order to control and minimize these nonproductive costs.

This is a book to be enjoyed. It is written to be readable. Anecdotes and examples are employed in great numbers to illustrate the points made. At least a hundred of Phil Carroll's friends, and probably yours too, are mentioned. Carroll takes a gentle dig now and then at some of his friends but it's all clean fun.

Readable But Meaty

Don't be misled, however, by a style which makes reading easy—a style that is Phil Carroll. This is not only a book to be read but a book to be studied. The examples are teasers. The way to derive real benefits from *How to Control Production Costs* is to go through the steps suggested, using your company figures. Check the points made by the author with cost data gathered in your own company. Prove or disprove his points with your figures.

Ideas which the reader can put to work are retailed in *How to Control Production Costs* at a penny each. Therefore, the return on the reader's investment may be high indeed if only a few good ideas are used.

JOSEPH O. P. HUMMEL
Chief, Management Development Branch
Mutual Security Administration
Washington, D. C.

The Human Equation Often Needs to be Refigured

Getting Things Done in Business edited by EDWARD C. BURSK. 152 pages. Harvard University Press. Price $3.25.

The human equation is one which many people over the years have tried to solve. Some answers have been accepted temporarily, discarded later, and others have been substituted.

"Getting Things Done in Business" is a small but provocative book analyzing the equation. Some poignant questions are asked; some startling replies are offered. The contributors to the book do not ask the readers to accept their statements as dogma, but ask only that the readers think and consider them.

In the open chapter, Mr. Jervis J. Babb says, "Too much of our effort in the field of human relations has been expended in a commercial vacuum."

"Why," he asks, "do boards of directors insist on approving capital expenditures for, say, a machine tool costing $10,000 with an expected life of 10 years, and at the same time pay little attention to the man who may cost from $100,000 to $1,000,000 over his useful lifetime?

"Why do we spend our best engineering skills and experience in maintaining, servicing, and oiling a machine in accordance with predetermined standards, and pay so little attention to maintaining, servicing, and oiling the man who runs it?"

Is This For Me?

Fundamentally, the book is a collection of concepts which should lead the business executive reader to ask himself, "Is that concept sound? Is it applicable to my business and my conduct of business? Could I adopt that philosophy as sound policy for my employee relations?"

One study that set this writer thinking is outlined in the chapter "Liberty and the Pursuit of Happiness in Business."

The study of a Chicago company some years ago revealed that management had a complete lack of understanding of human relations. The fear of losing their jobs was the only incentive that the employees had. The result of this policy was revealed in the red ink at the bottom of the profit and loss statement.

To counter that lack of understanding, Franklin J. Lunding said, "We have developed what we call a 'first assistant' philosophy. Each of our executives is asked to consider that he works as the first assistant to the next person in the line *below* him. He begins by developing an understanding with himself that he does not run the business but assists those who do. . . . Each executive is charged not so much with the directing and supervising of people as with offering and giving assistance to those who look to him for leadership."

Bookshelf
(Continued)

Another factor for consideration in the human equation is studied in the discussion of "Developing and Maintaining the Executive Team."

The reminder is made that "as administrators we have to think of the objectives of the organization, but we cannot forget that the individuals who are parts of our administrative units also have personal objectives which have to be taken into account."

Why Some Follow Others

And as a test of leadership there is this thought: "Is this the kind of fellow that others like to follow? If they *do* like to follow him, it is undoubtedly because they have concluded from their experience with him that he has the ability and the will—not just one *or* the other—to do them some good and to help them develop themselves so that they can do themselves some good."

There is included in the volume an interesting analysis of the relationship of management power and union power and the interplay of both; that one will increase as does the other; that teamwork between them will only exist where management is willing to relinquish some power as will the union. Then there is the startling statement that the strike and the lockout is a combined method for *reaching an agreement*, and as such fills an important function in our society.

Certainly, the businessmen of today, both middle and top management, have much to think about in the daily conduct of their business affairs. There exists a veritable treasure of thought stimulation in the chapters of this small, unpretentious book.

It's not a book to be read in one sitting. It is rather a series of appetizers to be taken at intervals. Test your reaction to each; play with each for a while; think about each concept; apply them if you like; accept and discard them as you will.

ROBERT C. TRUNDLE
President, Trundle Engineering Co.
Cleveland, Ohio

Everyone Should Know A Little Cost Accounting

Cost Accounting by THEODORE LANG, WALTER B. MCFARLAND, and MICHAEL SCHIFF. 741 pages. Ronald Press. Price $6.00.

It is of growing advantage that anyone with an interest in management should be familiar with the techniques of cost accounting. Side by side with professional management, modern cost accounting has developed into a major field in its own right.

Its sphere of activity, between those of the general accountant and the engineer, found acknowledgment only in the last generation. It is conceded that in modern managerial practice the function of the cost accountant as an interpreter of his data for management has become more and more important. Most frequently he is the ally of the industrial engineer in shaping management policies and decisions.

Many texts, handbooks, and other references have been published on or about cost accounting. This volume does not duplicate any but satisfies a quite different need. In this well organized book, the authors have drawn upon their combined experiences as teachers, practitioners, and research specialists to make it very informative and instructive.

Fortunately the authors were also highly successful in making it a very readable book, even for those whose primary fields of endeavor are not directly concerned with cost accounting.

As a Tool of Management

The authors not only interpret cost accounting in its function as a tool of management, but also the specific procedures and mechanics by which it can implement managerial controls in accordance with accepted up-to-date practice. For management it is especially valuable that they go even further in explaining the reasons based on sound theory which underlie the adoption of recommended procedures.

Although this book appears to be directed primarily to the student, it should be of great use in any library of business literature. As it contains study-questions with every specific topic, covering a wide variety of problems, and also provides — separately packaged — three practice sets covering process costs, job order costs, and standard costs, this book can be used very much like the Harvard case studies. It provides excellent source material for training programs of supervisory personnel or for round-table discussion within business.

HANS P. TREUENFELS
Management Consultant
Norwalk, Conn.

A Look At Postwar Europe

UN: Economic Survey of Europe Since The War by The Research and Planning Division, Economic Commission For Europe. 385 pages. Columbia University Press, 1953. Price $3.50.

As its name suggests, this Survey seeks to draw on the experience of the post-war period and to analyze its significance for the future. The report in its entirety is published by the Secretariat, and the views expressed in it are not to be attributed to the Economic Commission for Europe or the participating Governments.

The Survey is divided into four parts as follows: Part I—Post War Setting; Part II—Economic Policies and Achievements; Part III—Trade and Payments Problems of Western Europe; Part IV—Problems of Industrial Development and Organization.

The sixth in a series of reports prepared each year, the Survey concludes with a discussion of efforts made towards greater economic integration within Europe and of the extent to which this might assist in solving the problems analyzed in earlier chapters.

Well Worth Noting

U. S. Income Taxation of Private United States Investment in Latin America. United Nations, Department of Economic Affairs, New York, N. Y. 80 pages. Price $0.75.

Compensation Principles and Practices. Industrial Relations Center, University of Minnesota. 52 pages. Price $1.50.

OEEC: Measurement of Productivity. Columbia University Press, New York 27, N. Y. 104 pages. Price $1.25.

SAM National Officers: 1953-1954

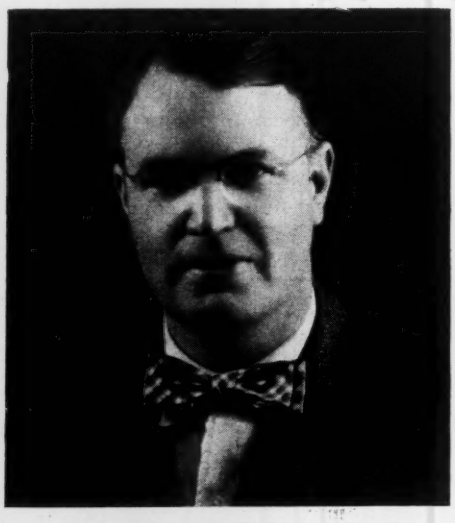
Bruce Payne • • • • • • President

President of Bruce Payne & Associates, Inc., management consultants, Westport, Conn. Formerly a vice president and director of Dyer Engineers, Inc.; National City Bank of Cleveland; Republic Steel Corp. B.S., University of California; M.B.A., Harvard Graduate School of Business Administration. Member *AMA*, *NACA*, and *NMC*.

George B. Estes • • • • • • Exec. Vice President

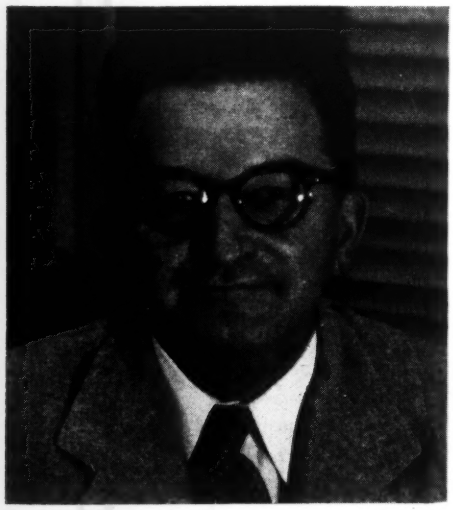
Assistant works manager, Seeger Refrigerator Company, Evansville, Ind. Formerly chief industrial engineer, Whitin Machine Works; chief industrial engineer, Chicopee Mfg. Corp., a division of Johnson & Johnson; on staff of Ford, Bacon & Davis, Inc. Graduate, Worcester Polytechnic Inst., with a degree in Aeronautics.

J. Bruce McNaughton • • • • • • Secretary



A graduate of the U. S. Naval Academy, Bruce did graduate work at California Institute of Technology. Now industrial engineer for The Jeffrey Manufacturing Co. Formerly with Linde Air Products Co. Served with the division of Production Planning and Procurement, U. S. Navy during World War II. Now president of Columbus Technical Council.

John B. Joynt • • • • • • Treasurer



Manager of Administrative engineering for American Enka Corp., Enka, South Carolina. Formerly director of Administrative Management Services, U. S. Veterans Administration. Member American Society for Public Administration, National Office Management Association, and *AMA*. Conducts courses regularly, Graduate School, N.Y.U.

Edward W. Jochim • • • • • • Director-at-Large

General manager Chicago plant and a member of the Board of Directors, Johnson & Johnson. President of *SAM* 1952-53. An engineering graduate of the University of Illinois and the Illinois Institute of Technology. Formerly with Mills industries and the National Metal Trades Association. Member Industrial Management Association.

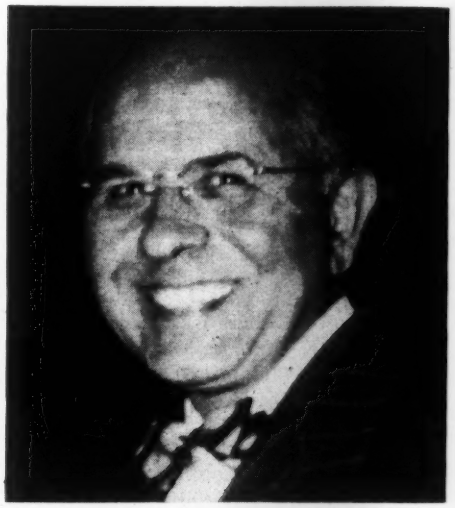
C. A. Slocum • • •
• • • Executive Director

Executive Director of the Society since 1950, Mike holds a B.S. and M.A. from Oklahoma A.&M. Before joining the Society he was head of the department of Industrial Management at the University of Tennessee. He also taught at Kent State University and Pikesville College. His industrial experience includes General Foods and General Motors.

Louis Arthur Lukenbill • • •
• • • Chapter Operations

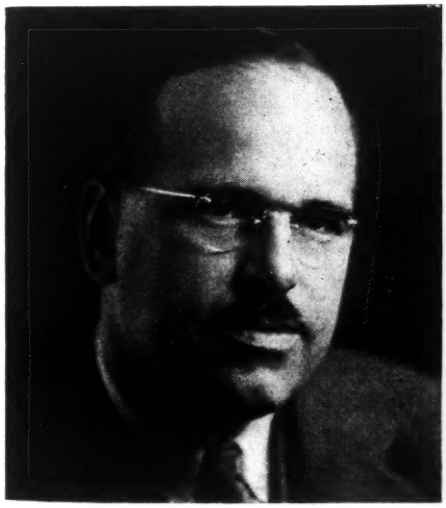
Management and industrial engineer and administrative assistant for Link Belt Co., Indianapolis. A.B. Indiana University; M.A. Columbia University. Formerly industrial engineer for Curtiss-Wright Corp. President of the Indianapolis Chapter 1952-53. Former president of the Hoosier State Business Institute.

Harold Fischer • • •
• • • Membership



Personnel director and professor of economics and business administration at Franklin & Marshall College. B.S. and M.A. in Business Administration from Ohio State University. Formerly with The Jeffrey Mfg. Co. Taught at Ohio State before joining the faculty at F.&M. Member of American Economics Association and *AMA*.

Ralph L. Jacobs • • •
• • • Student Chapters



Professor of vocational education at the University of Cincinnati. B.S.C.E. Delaware College; M.A. University of Pennsylvania; M.Ed. Harvard University; D.Ed. Harvard University. Member National Society for the Study of Education, National Education Association, and American Academy of Political Science.

Russell L. Moberly • • •
• • • North Central Region

A graduate of the University of Wisconsin, holding B.M., M.A. and Ph.D. degrees. Active in starting the Madison Chapter and assisted in the Fox Valley Chapter. Was director of Management Institute at University of Wisconsin for many years. Presently the director of newly organized Management Institute, Marquette University, Milwaukee.

Rhett Ball • • •
• • • Southeastern Region

A graduate of the University of the South, Sewanee, Tenn., and Harvard Graduate School of Business Administration. Presently vice president, Bruce Payne & Associates, Inc., Atlanta, Ga. Was vice president and treasurer, general mgr. and director, Southern Airways Company, Atlanta, Ga. Member of civic organizations.

Society Membership Up 15% During Year

For the 12-month period ending May 1, 1953, membership in the Society rose from 5,468 to 6,271—a gain of 15%. Broken down by membership grades, the Society's membership today is:

Honorary Life	**55**
Fellow	**56**
Firm Representative	**1363**
Member	**3697**
Associate Member	**986**
Junior Member	**114**

Of the 57 active chapters, 46 held even or gained members during the year. Only one chapter, Baton Rouge, was dropped from membership during the year. Among the chapters, Lancaster, Northern New Jersey, and Cleveland showed the largest gain in membership in the 12-month period.

Eight New Chapters

Eight new chapters were formed during the year: Binghamton, Charlotte, Clearing, Fox Valley (Appleton, Wisc.), Greenville, Madison, Reading, and Sacramento. These eight chapters added 348 members to the Society.

Normal attrition in a society such as ours runs about 20% a year. Hence the net gain of 15% in membership is even more impressive, and suggests the Society is entering upon a period of rapid growth.

Four chapters are in various stages of preparation for affiliation with the Society, and they should be added to the Society during the coming year.

Membership Kit Helpful

The membership promotion kit, prepared by Don Copell, vice president, membership, and produced by the national office, was distributed to all chapters during the year. The kit, designed to give prospective members a quick, yet comprehensive idea of the Society and its aims, was distributed to all chapters during the year. The Kit contains: "SAM—What It Is—What It Does," an issue of ADVANCED MANAGEMENT, application blanks, a list of firm members of the Society, a list of chapters and chapter officers, a membership breakdown, two 5-minute speeches, separation interviews, testimonial letters, and five typical solicitation letters.

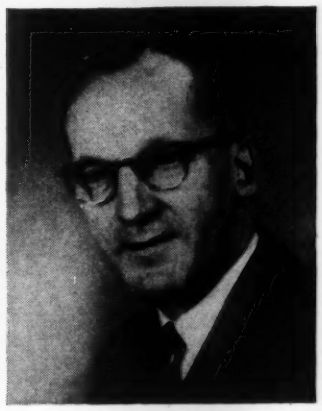
Chapter	Hon. Life	Fellow	Member	Firm Rep.	Assoc.	Junior	Total 5/1/53	Total 5/1/52
Atlanta	—	1	48	—	12	1	62	57
Baltimore	—	1	34	27	20	—	82	85
Baton Rouge*	—	—	—	—	—	—	—	37
Binghamton†	—	—	28	12	28	3	71	—
Birmingham	—	—	35	8	2	—	45	46
Boston	4	—	152	38	41	7	242	208
Bridgeport	—	—	21	14	26	2	63	60
Central New York	—	1	21	10	3	1	36	33
Central Pennsylvania	—	—	30	6	10	3	49	51
Charlotte†	—	—	27	42	5	—	74	—
Chicago	5	4	175	71	48	6	309	320
Cincinnati	1	—	123	174	15	1	314	267
Clearing†	—	1	12	32	2	1	48	—
Cleveland	3	—	166	60	62	3	294	284
Columbus	—	—	40	10	5	1	56	52
Dallas	—	—	92	4	8	—	104	91
Dayton	—	1	62	22	6	1	92	93
Detroit	1	1	117	36	34	3	192	177
Fox Valley†	—	—	19	15	5	—	39	—
Greensboro	1	—	21	49	20	—	91	107
Greenville†	—	—	20	23	7	—	50	—
Hartford	1	—	45	10	11	—	67	50
Hudson Valley	—	3	38	38	12	4	95	85
Indianapolis	—	—	70	9	22	3	104	100
Kansas City	—	1	13	2	8	—	24	24
Knoxville	—	—	16	22	10	—	48	48
Lancaster	1	—	114	28	21	6	170	99
Lehigh Valley	—	—	33	14	14	—	61	61
Los Angeles	1	7	97	9	40	1	155	140
Louisville	—	1	26	14	5	—	46	49
Madison†	—	—	27	5	1	—	33	—
Manchester	—	—	24	19	2	—	45	42
Milwaukee	2	—	115	10	20	1	148	132
Montreal	—	—	50	13	2	1	66	62
Nashville	—	—	15	2	6	3	26	14
New Brunswick	—	—	51	42	4	2	99	105
New Haven	1	1	66	7	15	1	91	88
New Orleans	—	—	29	13	1	—	43	53
New York	15	1	244	67	81	8	416	438
No. New Jersey	1	12	207	70	70	14	374	290
Philadelphia	6	2	183	71	63	13	338	308
Pittsburgh	1	—	164	23	30	4	222	205
Portland	—	—	24	4	14	—	42	37
Providence	—	—	42	11	3	—	56	58
Reading†	—	—	13	32	6	2	53	—
Richmond	—	—	17	23	8	—	48	37
Sacramento†	—	—	30	2	2	—	34	—
San Francisco	2	—	89	5	22	—	118	112
St. Louis	—	—	31	18	8	1	58	63
Stamford	—	—	9	—	3	—	12	12
Trenton	—	—	35	14	9	1	59	54
Twin City	—	—	35	—	4	1	40	35
Washington	5	17	167	10	44	4	247	234
Western No. Carolina	—	1	48	32	14	—	95	89
Western Massachusetts	—	—	25	16	1	—	42	33
Wilkes-Barre	—	—	17	23	6	—	46	48
Wilmington	—	—	48	2	15	2	67	48
Worcester	—	—	46	9	4	—	59	60
Non-Chapter	3	—	82	15	21	9	130	95
Non-Resident	1	—	69	6	5	—	81	92
Total	55	56	3697	1363	986	114	6271	5468

*Lost during year. †New during year.

W. CLEMENTS ZINCK
Lehigh Valley

OLIVER J. SIZELOVE
N. New Jersey

HAROLD U. MUMMA
Lancaster



EARL HAVNER
Boston

Emerson Trophy Award Plan Revised

To eliminate inequities in the Emerson Trophy Award Plan, President Jochim, in November 1952, appointed a committee to revise the award plan. At the National Directors' meeting April 18, 1953, the proposed draft of the award system was presented. The new plan was adopted at the Executive Committee meeting June 27. The new plan goes into effect this month.

Committee members who drafted the new plan are: Oliver J. Sizelove, chairman, Northern New Jersey; Earl Havner, Boston; John B. Joynt, Western North Carolina; Harold U. Mumma, Lancaster; and W. Clements Zinck, Lehigh Valley.

Five Categories Measured

The Emerson Award Plan is designed to measure all activities of the chapters that render management service, training, and education to members, and promote the welfare of the chapters. Major subdivisions of the activities measured are: Membership, programming, organization, publicity, and finances.

The thinking behind the breakdown is: A good organization will adequately publicize its activities and will build sufficient funds to finance an attractive program of management activities which will not only hold existing members but will attract new members.

Points Are Weighted

Points are awarded to chapters in such a manner so that any chapter regardless of size may earn as many points as any other chapter for those same activities.

Accounting of the chapter's performance is the full responsibility of each chapter. The national office will act only as an auditor of the performance reports submitted by the chapters.

Behind the new plan is the philosophy that the plan should be developed to a point where the chapters should furnish data necessary for their successful operation.

Thirteen awards will be made annually, based on final Emerson Trophy standing. Those awards are:

Harrington Emerson Bronze Tablet and Citation—The chapter placing first in the chapter ratings will receive this award. In case of ties, the Tablet will be shared and duplicate citations will be awarded.

Ordway Tead Bell and Gavel—This is awarded to the chapter placing second in the year-end standings.

President's Award—A suitable scroll will be presented to the chapter making the greatest percentage improvement in chapter standing during the plan year, as indicated by its standing at the end of the year compared to its standing at the end of the previous year.

Performance Banners—These banners will be presented to each of the first ten chapters, as indicated by the year-end standings.

Special Awards—These awards will be made for special activities not rated by the Emerson Award Plan. These activities include: Professional publications, quality of program announcements, research projects, and civil service.

CHAPTER PERFORMANCE AWARD PLAN

As of June 1, 1953

MEMBERSHIP OVER 100

N. New Jersey	7083	New York	1316
Philadelphia	6494	San Francisco	1145
Boston	4085	Chicago	1083
Greensboro	2830	Indianapolis	1056
Pittsburgh	2653	Los Angeles	872
Milwaukee	2605	New Brunswick	751
Washington	2302	Cincinnati	720
Detroit	1555	Cleveland	121

MEMBERSHIP UNDER 100

W. No. Carolina	5445	Manchester	515
Lancaster	4936	Binghamton	485
Lehigh Valley	2960	Providence	481
Hudson Valley	2560	Knoxville	480
Trenton	1950	Worcester	445
Baltimore	1825	Dayton	301
Charlotte	1450	Wilkes-Barre	245
Wilmington	1146	Stamford	180
Bridgeport	1142	New Orleans	170
New Haven	1038	Central N. Y.	140
Montreal	1011	Western Mass.	105
Richmond	1002	Kansas City	95
Central Pa.	925	Dallas	70
Atlanta	906	Louisville	40
Birmingham	905	Reading	40
Portland	846	Twin City	31
Greenville	705	Sacramento	31
Hartford	656	Madison	30
Nashville	636	Clearing	16
Columbus	630	Fox Valley	0
		St. Louis	0

Research and Development

Year's research activities marked by completion of two projects and naming of three new areas for study. Continued increase noted in number of SAM members participating in the research program.

THE SOCIETY'S program of management research continued in the past year to move ahead deliberately yet vigorously. A full-time director was hired. Two projects reached completion, two others made substantial headway, and three new projects were designated by the National Research Committee for preliminary analysis. Participation throughout the chapters continued on an increasing scale. By and large, the research function held its place in the continuum of frontier activity that characterizes SAM.

One of the completed projects, "Glossary of Terms Used in Methods, Time Study and Wage Incentives", was published toward the end of March. More than 3000 copies have been purchased in approximately three months and the rate of demand shows consistent rise. Evidence already exists to suggest that the *Glossary* may prove to be the most useful lexicon thus far published for promoting agreement and unified effort in many of the highly sensitized situations regularly affecting management-labor relationships.

Monumental Report Finished

The second project completed in the past year was the study evolving from the hundreds of thousands of ratings used in the development of the SAM Performance Rating Films. This report is being readied for publication. It is a monumental work, decidedly the most significant and definitive study yet made in the critical areas of effort-rating, fatigue allowances, and incentive performance. Its rigid analysis of data yields findings that illuminate and clarify, in a degree heretofore unapproached, the entire field of work measurement. Its effects on the industrial scene will be far-reaching and salutary. Moreover, the study is such that the uniqueness of its stimulus, methodology, and experimental design undoubtedly will cross beyond the field of industrial engineering and stimulate wide research in the field of psychophysics where the study of judgmental reactions is a matter of preoccupying interest.

The project, "A Management Code of Ethics", has made considerable progress through the facilities of The Bureau of Business Research, The Ohio State University. The collection of industry codes within the metal trades has been completed and the classification of the provisions of the various codes has commenced. Following the classification will be a questionnaire designed for use in surveying the members of a sampling of the metal trades industries to determine the nature and extent of their development of policy statements governing their business relations. A study will then be made to determine the influence of industry codes on company policies and practices.

In the "Office Standards" project, which the Society has undertaken conjointly with 18 other organizations, a considerable amount of useful data was gathered. The participating groups voted during the past year to reorganize their procedure with a view to gaining greater coordination of effort. The change is calculated to reduce the period of research required.

Future Plans

Looking to the future, the National Research Committee at its April meeting authorized preliminary planning for research in the following areas: distribution, aptitude testing for time study personnel, and the management applications of electronic computers. Interim committees were constituted to explore the respective areas as fields of research and to report findings and recommendations at the next Annual Fall Conference in New York City.

The project relating to distribution is tentatively titled, "Application of the Principles of Scientific Management to Problems of Modern Distribution." The vastness and complexity of the subject require initially a careful delimitation of the specific areas in which the Society's research efforts can most feasibly make a valuable contribution. The interim committee will include with its preliminary survey a general *modus operandi* from which one or several specific projects can be designed.

The almost incredible development of electronic computers prompted the National Research Committee to authorize a preliminary study of the potentials that these instruments hold for the advancement of good management. The sub-committee assigned is studying computers from the dual viewpoint of managerial control and employee motivation—each in relation to the known capacities and possible applications of computer devices. The report evolving from this exploratory study will be a guide in the formulation of a project specification.

In the area of time study, very little is known about the basic skill and personality patterns required in the person who develops proficiency in time study technique. The critical importance of the subject moved the general committee to authorize the drawing up of a procedure for developing aptitude tests to be used in the selection of time study personnel. The procedure has been completed and is under preliminary activation. Sufficient information will have been gathered to enable the assigned committee to present an evaluative report at the time of the forthcoming Annual Fall Conference.

Self-Liquidating Projects

The conduct of existing and planned research is made possible financially by income derived from the sale of the SAM Performance Rating Films and (recently) the sale of the *Glossary*. As time goes on, this income will be increased by returns on other published products of Society research such as the forthcoming Report on the Film Data and the documentation of A Management Code of Ethics. It is also anticipated that the newly selected projects of research will be in a reasonably short period become self-liquidating.

Directory of Firms

The constantly growing list of many of the country's outstanding companies and corporations that have obtained firm memberships in the Society indicates the increased interest in the Society by these firms.

A

Accurate Parts Mfg. Co.
Acme Chain Corp.
Acme-Hamilton Mfg. Corp.
Affiliated Gas Equipment, Inc.
Aircooled Motors, Inc.
Aircraft Transformer Company
Albany Felt Co.
Albermarle Paper Mfg. Co.
Albers Super Markets, Inc.
Aldens, Inc.
Alger Co., George F.
Allegheny Ludlum Steel Corp.
Allied Chemical & Dye Corp.,
General Chemical Div.
Nitrogen Div.
Allis-Chalmers Mfg. Co.
Aluminum Company of America
Aluminum Company of Canada, Ltd.
Aluminum Industries, Inc.
American Abrasive Metals Co.
American Airlines, Inc.
American Brake Shoe Co.
American Cyanamid Company,
Calco Chemical Div.
American Enka Corp.
American Forging and Socket Co.
American Gas & Electric Corp.
American Laundry Machinery Co.
American Mutual Liability Ins. Co.
American Pad & Textile Co.
American Steel & Wire Company
American Tag Company
American Tool Works Co.
American Trust Co.
American Viscose Corp.,
Sylvania Div.
American Zinc Co. of Tennessee
A. M. I. Inc.
Ampco Metal, Inc.
Anchor Hocking Glass Corp.
Anheuser-Busch, Inc.
Ansul Chemical Company
Antell, Inc., Charles
Anvil Brand, Inc.
Architectural Tiling Co.
Argus Cameras, Inc.
Armco Steel Corp.,
Rustless Iron & Steel Div.
Armour and Company
Armstrong Cork Co.
Arrow Mfg. Co., Inc.
Arvin Industries, Inc.
Arwood Precision Casting Corp.
Atantic Refining Co.
Atlas-Boxmakers, Inc.
Auburn Button Works, Inc.
Autograf Brush & Plastics
Avondale Mills

B

Baird Associates, Inc.
Baldwin-Hill Co.
Baltimore Life Insurance Co.
Baltimore Signal Depot
Bank of America N. T. & S. A.
Barnes Textile Associates, Inc.
Barre Wool Combing Co.
Barre Wool Combing Co., Ltd.
Barrington Associates, Inc.
Bausch & Lomb Optical Co.
Beacon Mfg. Co.
Bean & Sons Co., D. D.
Beckett Paper Co.
Behr-Manning Corp.
Belk Brothers Co.
Bell Telephone Laboratories, Inc.
Bendix Aviation Corporation,
Bendix Radio Div.
Friez Instrument Div.
Bercut-Richards Packing Company
Berylium Corp., The
Bethlehem Steel Co.
Better Brushes, Inc.
Bigelow-Sanford Carpet Co., Inc.
Billings and Spencer Co., The
Binghamton Container Co., Inc.
Bird Machine Company
Birdsboro Steel Foundry & Machine Co.
Black-Clawson Co.
Blue Bell, Inc.
Blue Ridge Manufacturers, Inc.
Blumenthal & Co., Inc., Sidney
Bond Crown & Cork Co.
Borden Company,
Chemical Div.
Brewing Corporation of America, The
Bridgeport Machines, Inc.
Bridgeport Rolling Mills, The
Bristol-Meyers Co.
Brockway Glass Co., Inc.
Brookshire Knitting Mills, Inc.
Brown Fintube Co.
Brunswick Ordnance Corp.
Buckeye Foundry Co.
Budd Company, The
Bullard Co., The

C

Calvert Distilling Co.
Cambridge Tile Mfg. Co., The
Camillus Cutlery Company
Canadian Ingersoll-Rand Co., Inc.
Capital Transit Co.
Carbon Malleable Casting Co.
Carolina Metal Products
Carolina Motor Club
Carpenter Steel Co., The
Carr-Consolidated Biscuit Co.
Casco Products
Celanese Corporation of America,
Plastics Div.
Chadbourn Hosiery Mills
Champion Paper & Fibre Co.
Cherokee Textile Mills
Chesapeake & Potomac Telephone Co.
Chesapeake & Potomac Telephone Co.
of Baltimore City
Chicago Screw Company
Chromcraft Division (AFMG)
Cincinnati Gas & Electric Co.
Cincinnati Gear Co.
Cincinnati Gilbert Machine Tool Co.
Cincinnati Industries, Inc.
Cincinnati Milling Machine Co.
Cincinnati Shaper Co.
Cincinnati Time Recorder Co.
C. I. T. Corp.
Clayton & Lambert Mfg. Co.
Cleanser Products, Inc.
Clearing Industrial District, Inc.
Clearing Machine Corp.
Clearwater Finishing Co.,
Old Fort Div.
Clifton Corporation
Clopay Corporation
Cluett, Peabody & Co., Inc.
Cold Spring Bleachery
Colgate-Palmolive-Peet Co.
Columbia Machinery &
Engineering Corp.
Combustion Engineering
Superheater, Inc.

(Continued on page 31)

Engineers Need More

By BERKOWITZ and ODIORNE

(Continued from page 18)

agement planning. Even greater was the percentage of those who felt that they should be informed of management's plans for the future.

After many years of purely technical training they nonetheless felt that they would like to be a part of management, and, further, wanted to be in the know about management thinking and planning. They were quick to note and resent any lack of human relations skill on the part of the management as it affected them even though they were indifferent to these skills as tools which might be useful to them in dealing with others.

It goes without saying that a few conference sessions, even under the most skilled leader, were not the final answer to the problem. However, some positive gains *were* noted in this company even after the first series of conferences. At least some problems emerged in clearer focus.

It was shown, for example, that certain serious blocks to both upward and downward communication between engineers and management existed. The conference groups served two purposes in this respect: First, to reveal that the blocks existed, and secondly, to provide a brief bridge over which information could flow quite freely between the two groups.

This could not be a final answer; the company had to take aggressive action to clear the channels of communication and start the regular flow of information in both directions. The university's part was to provide the conference leadership and to point up the problems and something of the many possible solutions. As an outsider it could do this admirably well, but, as always, the choice of these solutions and their administration had to remain the company's business.

The pattern which this particular company has followed appears especially suited to the organization and personnel in it. That is not to say that it is universally acceptable to all companies. In each case the solution will be different, but some general conclusions present themselves as regards the efficient utilization of engineers.

Conclusion

Training engineers in human relations is necessary. It is no excuse to say that "they don't need it because all they do is technical work anyhow." Nor is it valid to slight nontechnical training because management feels that the engineers themselves don't want it. Even the most technically engaged person is interested in his job, his company, and in the case of engineers wants to participate in its planning. Such training should also help in the development of the potential which exists in the engineering staff for managerial positions. More and more industries require a knowledge of engineering on the part of those who administer the company's affairs. The development of whole men to meet the need is of primary importance, and the job of doing it rests squarely upon industry itself.

Most important of all, however, is a recognition of the fact that the "skilled barbarian" with extensive knowledge of physical laws and principles, but no knowledge of people and society, breaks down under our present methods of doing business. He is a luxury which neither our society nor industry can afford.

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Cone Mills Corp.
Conestoga Transportation Co.
Congress of Industrial Organizations
Conmar Products Corp.
Container Company, The
Continental Can Co.
Cook and Staff, Joseph M.
Cooper Alloy Foundry Co.
Copper Alloy, Stainless Eng. & Machine Works
Corn Products Refining Co.
Cornell Wood Products Co.
Coro, Inc.
Corrigan, Osburne & Wells
Coyne & Company, Inc.
Creole Petroleum Corp.
Croname, Inc.
Crosley Corp.
Crouse-Hinds Company
Crown Can Co.
Curtis Lighting, Inc.

D

Dan River Mills, Inc.
Dave Steel Co., Inc.
Davison Chemical Corp.
Dayton Precision Mfg. Co.
Dayton Rubber Co.
Deering Milliken Service Corp.
Delmonico Foods, Inc.
Dempster Brothers, Inc.
Dennison Mfg. Co.
Diamond Brothers Company
Diamond Expansion Bolt Co., Inc.
Dick Co., A. B.
Dickey & Sons, Inc., W. J.
Dickie-Raymond, Inc.
Dixie Cup Co.
Dixie-Home Stores
Dodge Cork Company, Inc.
Doepke Mfg. Co., Charles Wm.
Donnelley & Sons Co., R. R.
Downington Paper Company
Drackett Co.
Drake, Startzman, Sneahan, B. Barclay, Inc.
Draper Corp.
Drexel Institute or Technology
Driver Co., Wilbur B.
Duke Power Company
Duplan Corp.
du Pont de Nemours & Co., Inc., E. I.
Duriron Co.

E

Eagle-Picher Co., The
Eastern Tablet Corporation
Eby, Inc., Hugh E.
Economy Equipment Co.
Ecusta Paper Corp.
Eddy-Rucker-Nichols Company
Electric Storage Battery Co.
Electro Manganese Corp.
Emery Industries, Inc.
Erving Paper Mills
Esso Standard Oil Company
Ethican Suture Laboratories, Inc.
Eureka Specialty Printing Co.

F

Factory Management & Maintenance
Farnam Mfg. Co., Inc.
Farrell-Cheek Steel Co.
Fashion Frocks, Inc.
Federal Enameling & Stamping Co.
Federal Reserve Bank of Philadelphia
Fidelity Electric Co., Inc.
Fieldcrest Mills
Finest Foods, Inc.
First National Bank & Trust Co.
Ford Motor Co.
  Cleveland Engine
  Detroit
  Los Angeles
Formica Co.
Foster Wheeler Corporation
Four Wheel Drive Auto Co.
Fry & Associates, George

G

Gardner Board & Carton Co.
General Aniline Film Corp.,
  Ansco Div.
  Ozalid Div.
General Electric Company,
  Dallas Plant
  East Boston Lamp Works
  Waterford Plant
General Foods Corporation,
  Franklin Baker Div.
General Motors Corporation,
  Delco Products Div.
General Shoe Corp.
Gibbons Brewery
Gibson Art Co.
Gifford-Wood Co.
Gilbert & Baker Manufacturing Co.
Gisholt Machine Company
Glen Raven Cotton Mills, Inc.
Glidden Company, The
Globe Industries, Inc.
Globe Wernicke Co.
Grammes & Sons, Inc., L. F.
Gray Co., G. A.
Griffenhagen and Associates
Gruen Watch Company

H

Hall & Liles
Hall Printing Co., W. F.
Hamilton Foundry & Machine Co.
Hamilton Manufacturing Company
Hardware Mutual Casualty Co.
Hardware Mutual Gas Co.
Harris-Seybold Co.
Hartford Steel Ball Co.
Hassenfeld Brothers, Inc.
Heekin Can Company, The
Hellwig Dyeing Corporation
Henderson, Lindsay & Michaels, Inc.
Hercules Powder Company
Herff Jones Co.
Heritage Furniture, Inc.
Hershey Machine & Foundry
Hess & Eisenhardt Co., The
Hess, Goldsmith & Co., Inc.
Heyden Chemical Corporation
Hickok Electrical Instrument Co.
Hill-Clark-Francis, Ltd.
Hilton-Davis Chemical Co.
Hitchener Mfg. Company, The
Hoener Corp.
Hollinger Consolidated Gold Mines, Ltd.
Holmes Co., Ltd., D. H.
Hooper Company, Inc., F. X.
Hospital Care Corp.
Houghton & Co., E. F.
Houston Fire & Casualty Ins. Co.
Howard Company, Harold F.
Hudson Co., J. L.
Huffman Mfg. Co.
Hughes Aircraft Co.
Hunter Machine Company, James
Hunter Packing Co.
Huyck & Sons, F. C.
Hydraulic Equipment Co.
Hyster Company

I

Industrial Tape Corporation
Inland Steel Company
International Business Machine Corp.
International Derrick & Equipment Co.
Irvington Varnish & Insulator Co.

J

Jackson Mills
Jergens Co., Andrew
Johns-Manville Products Corp.
Johnson & Johnson

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J *(Continued)*

Joy Mfg. Co.,
Mines Equipment Div.
Jung Products, Inc.

K

Kahn's Sons Co., The E.
Kaiser Frazer Engine Division
Kearney & Trecker Corp.
Walker-Turner Div.
Keasbey & Mattison Co.
Keller Tool Company
Kellogg Switchboard & Supply Co.
Kendall Mills
Keystone Brothers
Kilbourne & Jacobs Mfg. Co.
Kirk and Blum Mfg. Co.
Klopman & Sons, Inc., William
Knight & Associates, Lester B.
Koppers Co., Inc.
Kreisler Mfg. Corp., Jacques
Kroger Co.

L

Lake City Malleable Co.
Lamson & Sessions Co.
Lancaster Malleable Castings
Lancaster Press, Inc.
Lansing Drop Forge Co.
Lanston Monotype Machine Co.
Laurens Mills
Lavoie Laboratories
LeBlond Machine Tool Co., R. K.
Leetham, Simpson, Ltd.
Lefkowitz & Brothers, Inc., Louis
Lever Brothers Company
Levinson Steel Co.
Lewis-Shepard Company
Lieberknecht, Inc., Karl
Lingerie, Inc.
Link-Belt Co.
Lockwood Mfg. Co.
Lodge & Shipley Machine Tool Co.
Lord Mech. Contractors, P. S.
Louden Machinery Co.
Lowe Paper Co.
Lukens Steel Company
Lunkenheimer Co.
Lynchburg Foundry Co.

M

McClure, Hadden and Ortman, Inc.
McCormick & Co., Inc.
MacDonald Bros., Inc.
McDonnell Aircraft Corp.
Mackintosh-Hemphill Co.
Magazines of Industry, Inc.
Magnaflux Corp.
Mahon Co., R. C.
Maiden Form Brassiere Co., Inc.
Management Services, Inc.
Manischewitz Co., B.
Mann Edge Tool Co.
Manning Paper Co., Inc., John A.
Marathon Corp.
Maremont Automotive Products, Inc.
Markem Machine Co.
Master Vibrator Co.
Meili-Blumberg Corp.
Meredith Publishing Co.
Merrell Co., William S.
Met-L-Wood Corp.
Miami Margarine Company
Miami University, School of Business Administration
Miller Motor Company
Miller and Rhoads, Inc.
Milsan Mills, Inc.
Mine Safety Appliances Co.
Mitchell & Smith, Inc.
Mock Judson Voehringer Co., Inc.
Modern Transfer Company
Mohawk Carpet Mills, Inc.
Moland-Drysdale Co.
Morris Machine Tool Co.
Morrison Steel Company
Mundet Cork Corporation
Mutterperl Co., Sol,
Fairhaven Corp. Div.

N

Naperville Prince Castles Co.
Narrow Fabric Co., The
National Automotive Fibres, Inc.
National Container Corp.
National Lead Company,
Titanium Div.
National Malleable & Steel Castings Co.
National Publishing Co.
National Screw & Mfg. Co.
New England Bobbin & Shuttle Co.
New Jersey Zinc Co.
New Jersey Zinc Company of Pennsylvania
New Orleans Public Service, Inc.
New York State Placement & Unemployment Insurance
Nordberg Mfg. Co.
Norman Products Co.
North Carolina Finishing Co.
North Texas State College

O

Oerlikon Tool & Arms Corp.
Old Dominion Box Company
Olin Industries, Inc.
O. P. W. Corp.
Oregonia Bridge Co.
Orr & Sembower, Inc.
Osborne Co.
Osborn Mfg. Co.
Outcook Mfg. Co.
Owens-Corning Fiberglas Corp.

P

Palm Beach Company
Paragon Electric Company
Patent Button Co.
Personal Products Corporation
Peterson & Neville, Inc.
Petrolane Gas Co., Inc.
Phillippine Air Lines
Piedmont Shirt Co.
Pittsburgh Plate Glass Co.
Pomona Terra Cotta Co.
Porter Cable Machine Company
Pratt, Read & Co., Inc.
Precision Rubber Products Corp.
Premier Tool Work, Inc.
Presto Lock Co.
Price Battery Corp.
Price Brothers Co.
Princess Elkhorn Coal Co.
Procter & Gamble Co.
Proctor Electric Co.
Proctor & Schwartz, Inc.
Production Instrument Company
Producto Machine Co.
Public Service Company of New Hampshire
Pullman Standard Car Mfg. Co.

R

Raadgevend Bureau Ir. B. W. Berenschot
Ramond & Associates, Inc., Albert
Randall Co.
Randolph Mills, Inc.
Raybestos—Manhattan, Inc.
Ray-O-Vac Company
Reading Batteries, Inc.
Reading Crane & Hoist Corp.
Reading Tube Corp.
Reece Corp.
Reed and Barton Corp.
Reed & Prince Mfg. Co.
Reeves Instrument Co.
Remington Rand Inc.
Reynolds Metals Co.
Rhode Island Textile Co.
Richardson Co.

R *(Continued)*

Richardson Engineering Co.
Richardson Taylor Globe Corp.
Richmond Engineering Co., Inc.
Robertshaw-Fulton Controls Co., Amer. Thermometer Div.
Robertson Paper Box Co., Inc.
Rochester & Pittsburgh Coal Co.
Rock Hill Printing & Finishing Co.
Rockwell Mfg. Co., Pittsburgh Du Bois Div.
Rogers Corp.
Rohm and Haas Company
Rouse (Canada) Ltd., Wallace G.
Rouse & Silkey, Ltd.

S

Sacks Barlow Foundries, Inc.
St. Regis Paper Company
Sample-Durick Co.
Scaife Company
Schaible Co.
Scheirich Co., H. J.
Schulze and Burch Biscuit Co.
Schwitzer-Cummins Co.
Seagram & Sons, Inc., Joseph E.
Sears-Roebuck & Co.
Security Steel Equipment Corp.
Seminole Mills, The, Statesville Div.
Sessions Clock
Sharpe & Dohme, Inc.
Shartle Brothers Machine Company
Sheffield Corp.
Sheltered Workshop for the Disabled, Inc.
Shillito Co., John
Simmons Co.
Simplex Wire & Cable Co.
Simpson Co., Warner P.
Singer Sewing Machine Co.
Singer Mfg. Co.
Sistemas McBee de Mexico, S. A.
Slaymaker Lock Company
Smith, Inc., Alexander
Smith, Kline & French Laboratories
Socony Paint Products Company
Sohio Petroleum Co.
Sordoni Construction Co.
S. O. S. Co.
Southern Line Material Co.
Sprague Electric Co.
Spring Garden Institute
Standard Knitting Mills, Inc.
Standard Oil Co. (New Jersey)
Standard Pressed Steel Co.
Standard Register Co., The
Standard Steel Spring Co.
Star Brush Mfg. Co., Inc.
Stearns & Foster Co.
Steel Company of Canada, Ltd.
Steelcraft Mfg. Co.
Stehli & Company, Inc.
Stevens & Co., The, Stanley Mills Div.
Stevens & Sons Co., M. T.
Stevenson, Jordan & Harrison, Inc.
Stillwater Clay Products Co.
Stix, Baer & Fuller
Stockton, West, Burkhart, Inc.
Stolper Steel Products Co.
Stonecutter Mills Corp.
Strong-Narovec & Co.
Stryker Machine Products Corp.
Sunnen Products Co.
Sunrise Dairies
Symington-Gould Corp.

T

Taylor Sons Co., Charles
Taylor-Wharton Iron & Steel Co.
Tennessee Coal, Iron & Railroad Co.
Terrell Machine Co.
Textile Machine Works
Textile World
Textron, Inc.
Thalhimer Bros., Inc.
Thew Shovel Co.
Thomas & Betts Co.
Tigerton Lumber Company
Transducer Corp.
Trundle Engineering Co.
Tulane University

U

Uhling, Lauer and Associates
Underwood Corp.
Union Bag and Paper Corp.
Union Carbide and Carbon Corp., Bakelite Div.
United Air Lines, Inc.
United Merchants & Mfrs., Inc.
United Mills, Inc.
United Parcel Service of America, Inc.
United States Metals Refining Co.
University of Bridgeport
University of Cincinnati, College of Business Administration
University of Michigan, Survey Research Center
University of New Hampshire
University of North Carolina, School of Business Administration
University of South Carolina, School of Business Administration
Univis Lens Co.
U. S. Playing Card Co.
U. S. Rubber Co.

V

Victor Mfg. & Gasket Co.
Virginia Electric & Power Co.
Virginia Mills, Inc.
Visking Corp.
Volunteer Portland Cement Co.
Vulcanized Rubber & Plastics Co.

W

Wachovia Bank & Trust Co.
Warren Foundry & Pipe Corp.
Washington Water Power Co.
Waterbury Mfg. Co.
Wennonah Cotton Mills Co., A. H.
Western Automatic Machine Screw Co.
Whiting & Sons, Inc., David
Wilkes College
Willson Products, Inc.
Winthrop-Stearns, Inc.
Woodall Industries, Inc.
Woodside Mills
Work-Factor Co.
Wrisley Co., Allen B.

Y

Yale & Towne Mfg. Co.

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The following is a list of student chapters:

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